

The magazine for **AUSTRALIAN Amateurs**



March 2003
Volume 71 No 3



Amateur Radio

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**AUSTRALIAN
SUMMER WILDFIRE:
radio
amateurs in
action**

by Jim Linton
VK3PC

**An Experimental
Patch Antenna for 70 cm**

Part 2

Greg Chenco VK3BLG

**A "Kalitron"
Gate Dip
Oscillator/Crystal
Checker**

Drew Diamond VK3XU

IOTA OC-251

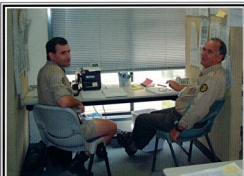
**Lady Julia
Percy Island**

September 27-30, 2002

WICEN
fires up

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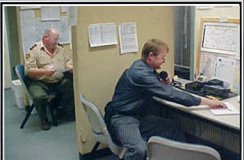
Mark Dods VK3XMU and Mark Dods (Snr) VK3ZR at the Corryong Incident Control Centre



Maggie Iaquinio VK3CFI at the 'battle board' which pinpointed the fire and the resources fighting it.



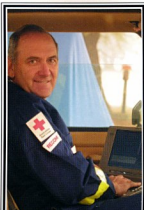
WIA Federal WICEN Coordinator and WICEN (Vic) member John Weir VK3ZRV in action at Mt Beauty.



On night shift, Greg Morse VK3FGM and Phil Pavey VK3YB



In constant demand, Carol Tremellen at the WICEN (Vic) Administration Centre.



RECOM spokesman John Patterson VK3ATQ in a rare quiet moment.

Radio Amateurs in the firing line



Ken de Silva VK3FKD logging traffic at a heli-airbase.

Background photo by CFA
Volunteer Firefighter
Graeme Robertson



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Our Cover this month

In the recent spate of bushfires in many areas in Australia, WICEN's contribution has been significant. The centre picture shows VK7 WICEN members Gavin VK7HGO and Robert VK7RB operating at the Bluff Road Control, Claremont fire station during a recent fire near Hobart.

The background fire is from a shot taken in Eastern Victoria by Graeme Robertson, CFA volunteer firefighter and reproduced by permission of the CFA.

More details are in Jim Linton VK3PC's report on the Victorian bushfires. Many other contributors have also reported their experiences. See especially the Division News.

Contributions to Amateur Radio

Amateur Radio is a forum for WIA members' amateur radio experiences, opinions and news. Manuscripts with drawings and/or photos are always welcome and will be considered for publication. Articles on disc or email are especially welcome. The WIA cannot be responsible for loss or damage to any material. A pamphlet, How to write for Amateur Radio is available from the Federal Office on receipt of a stamped self-addressed envelope.

Back Issues

Back issues are available directly from the WIA Federal Office (until stocks are exhausted), at \$4.00 each (including postage within Australia) to members.

Photostat copies

When back issues are no longer available, photocopies of articles are available to members at \$2.50 each (plus an additional \$2 for each additional issue in which the article appears).

Disclaimer

The opinions expressed in this publication do not necessarily reflect the official view of the WIA and the WIA cannot be held responsible for incorrect information published.

Amateur Radio Service

A radiocommunication service for the purpose of self-training, intercommunication and technical investigation carried out by amateurs; that is, by duly authorised persons interested in radio technique solely with a personal aim and without pecuniary interest.

Wireless Institute of Australia

The world's first and oldest
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Editorial Comment

Colwyn Low VK5UE

Amateurs serving the community

The bushfire disaster in southeast Australia is still with us but hopefully by the time you read this it could be over. The big blue firebreak at Bass Strait may not have been needed.

In this issue we bring you details of Amateur involvement in the response to the emergency. While the article applies specifically to Victoria similar response from Amateurs was required in other states.

This all illustrates the need to continually be prepared and that WICEN is a necessary part of the State Disaster response plans. So please make an effort to join WICEN or at least help in some of the WICEN community support activities to gain experience, which could be useful in an emergency affecting you.

One point which particularly struck home to me was the use of digital modes to ensure accuracy of message handling and to improve reliability on circuits which would have been impossible to operate using SSB. I had experience using packet at the 2002 Classic Adelaide Rally with the WICEN team. It worked extremely well. In fact the WICEN Team won the award for the Best Team supporting the rally operation.

The contest season is upon us, we have been out in the heat for the Summer VHF/UHF Field Day and the John Moyle Field day will be held on March 15/16th. The VK/trans Tasman Contest, our local DX sponsored Contest will be held at the end of May. This is when all the World comes specifically looking for VK contacts. So please put in some time to make an entry.

Unfortunately there is no "How's DX" column in this issue. Ross Christie VK3WAC had a hard drive failure and lost both data and software used in production of the column. We hope he will be back with a DX column in April. Further no "VHF- UHF.. and Expanding World" was submitted for this issue

The WIA Federal Convention is being held on April 4th to 6th in Adelaide. So there is just time to raise your concerns and accolades with you Divisional Council and Federal Councillor before they finalise their views for presentation to the Convention. This will be the main forum to determine where the WIA goes in the next 12 months. No Morse, 300kHz on 40 m, primary allocation on 70 cm, moves towards a Foundation licence or not, can we have an Australia wide WIA with state divisions or do we have to stick with State Divisions and a Federal WIA? It is your WIA so speak now so you do not have to grumble about not being heard afterwards.

Amateur Radio magazine is revising how it operates so there may be a few changes in the way we receive and acknowledge material submitted to the magazine. The Editor does not do some of this very well at present.

Finally I am pleased to see *Radio and Communications* back on the Newsstands.

So enjoy your hobby. Let others know what Amateur Radio is about. Which activities you enjoy and which they might find enjoyable.

73 Colwyn

John Moyle Field Day March 15 & 16

Have a day in the fresh air.

Get out the portable gear and see if it still works, you never know when you might need it in a hurry.

Australian summer wildfire: Radio Amateurs in action

The extreme bushfires in southeast Australia in January and February 2003 saw radio amateurs continuing a tradition of providing emergency communications, and winning high praise for their efforts. *Jim Linton VK3PC reports.*

Summer fires have seen radio amateurs in southeast Australia providing various levels of involvement to assist emergency and relief organisations, and local communities.

While acknowledging such a spread of involvement, this article is confined to what happened in Victoria, where two groups were heavily involved – WICEN

(Vic) and the Red Cross Emergency Communications (RECOM).

Officially called the Bogong fire, the furious forest blaze in northeast Victoria burned uncontrolled for four weeks engulfing more than one million hectares of public and private land. Conditions were extreme, brought on by five years of low rain, the worst Australian drought in 100 years, strong winds, high temperatures, and single-digit relative humidity.

The WICEN (Vic) deployment in Region 4, the northeast, ended on 11 February with the departure of the last operator. The fire spread further into the eastern Victoria Gippsland Region 5, under the command of Chris Morley VK3KME. Some of those who had served in Region 4 had a second stint in Region 5. The fire was calmed by rainfall on 22 February.

Police and Department of Sustainability and Environment praise WICEN (Vic)

Victoria Police Superintendent Murray Adams, State Emergency Response Officer said, "The response by WICEN volunteers has been magnificent."

Supt Adams said, "No sooner had I spoken to John Kerr (State Co-ordinator) than WICEN personnel were in the field, assisting the fire fight by staffing radios for the Department of Sustainability and Environment (DSE).

"Their commitment and enthusiasm to assist in the long term is to be commended. While they were only one of 25 organisations involved in the response, their unselfish input has assisted the State tremendously.

"In my nine years as the State Emergency Response Officer, this is by far the biggest, and most sustained effort provided by WICEN as a result of a request for help in a major emergency."

DSE State Fire Co-ordinator, Peter Billing described the WICEN (Vic) volunteers as being skilful, adaptable, and the "human link" vital to its radio communications network throughout Victoria.



WICEN (Vic) State Coordinator John Kerr VK3BAF and Victoria Police State Emergency Response Officer, Supt Murray Adams who described the involvement of WICEN as "magnificent".

Continued on page 4

Australian summer wildfire: Jim Linton VK3PC report continued

Continued from page 3

The Department, as the lead fire agency in the Alpine area of Victoria, "appreciates the limitless efforts of the Wireless Institute Civil Emergency Network volunteers," Mr Billing said. "They have been involved from the

beginning and were able to start working with the radios after minimal training to become familiar with DSE's networks and protocols.

"We have deployed them across the state to assist our Incident Management Teams to communicate with people at

the fire front," he explained.

Mr Billing said, "They have been the human link between the radios. Without their skills and knowledge, important messages about the movement of people and equipment wouldn't get through."

More than 60 years of tradition

It is a tradition for radio amateurs to provide emergency communications for the benefit of the community. This has occurred since the 1939 Black Friday fire disaster. Other major occasions include Cyclone Tracy 1974, Ash Wednesday 1983, and the Newcastle Earthquake 1989.

However, in the absence of a major disaster, plus increased communication resources for emergency services, the ubiquitous mobile phone, and other factors, there were widely held doubts that our hobby would ever again provide a vital emergency service.

The Senate Standing Committee description of WICEN was truly put to the test. The enormity of the Bogong fire saw fire fighting services stretched to their limit in terms of both resources to deal with the fire outbreak, and being able to maintain communications from multiple control points for a prolonged engagement.

The Department of Sustainability and Environment (formerly NRE) recognised early during the fire emergency that it could draw on the voluntary resources of WICEN (Vic). Long-established relationships between DSE and WICEN helped in the process.

DSE advised Superintendent Murray Adams, State Emergency Response Officer, that it needed radio operators, and he activated WICEN (Vic) on 19 January, under Victoria's Emergency Management Plan.

WICEN Region 4 Division 4 Co-ordinator, Peter Weeks VK3YZP said, "It was a team effort, I had been backed up by many WICEN people and we could not have done it without them."

Peter VK3YZP who has been described by his colleagues as the "Commander" of the WICEN deployment, made particular mention of

Leyland Sawyer VK2GBZ, Carol and Graeme Tremellen VK3GPT, State Coordinator John Kerr VK3BAF, and HF Net Operators Fred Storey VK3JM, John Bell VK3FJB and Peter Repschlager VK3YG.

In both the north-east and Gippsland at a total 12 locations, WICEN (Vic) at last count had a total of 72 involved, made up from 63 radio operators and

Incident Control Centres and five airwing bases. There were also telephones to answer and fax machines to be maintained.

They had to quickly adapt to the trunking radio, unfamiliar operating protocol and plenty of jargon. The long shifts and usually a five day assignment was not something that everyone could commit to due to their personal situations. The experiences of some volunteers appear later in this article.

Additionally WICEN (Vic) set up a statewide HF network at the request of the Victoria Police, which ran twice daily skeds on 40 m and 80 m, in case it was needed.

In an administration role, Carol Tremellen with support of husband and former WICEN (Vic) State Co-ordinator Graeme VK3GPT, manned the telephones and email system from their home in Healesville.

Peter VK3YZP was involved professionally with maintaining radios and repeater networks at Corryong Incident Control Centre (ICC) for DSE during the first week of the fires.

His local knowledge of the fire situation enabled timely advice to be provided to WICEN (Vic) volunteers in terms of what they would face.

And despite this high level of involvement during the early stage of the emergency, Peter had to return home for the impending arrival of his first child—a son. His WICEN 'family' keenly awaited news of the birth.

The Senate Standing Committee on Industry, Science, Technology, Transport, Communications and Infrastructure 1994 said in part:

'WICEN is a volunteer group of radio amateurs with communications and information transfer skills and equipment. This organisation can be called upon by response and recovery agencies and the general community in times of emergency. WICEN's major role is the co-ordination of the response of the general amateur radio service in times of need.'

nine co-ordinators and resources personnel.

The volunteers worked 12 or eight hour day and/or night shifts as the varying situations required. While accommodation was in abundance in the northeast, this was not so in Gippsland where some slept in tents.

Their primary role was to operate the trunk radio system for DSE at both

WICEN (Vic) administration was superb

Well away from the fires but key to WICEN's deployment was Carol Tremellen. The alarm clock would sound at 7am each day for four weeks and Carol was still on the job at midnight most nights.

Her role was to run the WICEN (Vic) Administration Centre which among many things kept in constant liaison with Peter Weeks VK3YZP the "Commander" of the activation, and State Co-ordinator John Kerr VK3BAF.

Hundreds of telephone call and emails were handled. Many of these were official WICEN communications with the Victoria Police and other agencies, but others were from radio amateurs responding to the statewide call for volunteers and included the 95 operators who initially volunteered for service.

Those deployed include two women, who while associated with WICEN (Vic), were not themselves radio amateurs. They performed excellently using their knowledge and skills to great effect.

Amid all of the activity Carol Tremellen took on the task of "Welfare

Officer" which included talking with wives of volunteers who just wanted to have a chat about things. Two of the volunteers in the field needed to be recalled from duty after relatives died.

In another instance Greg Morse VK3FGM assigned to the Ovens ICC made a hurried return to his Bendigo home after a firebug set alight its back fence and then backdoor on two separate occasions, making it a very stressful time for his wife and children.

Carol said, "A highlight was the birth on 31 January of Peter and Di Weeks' first child - Lance John, who arrived late and weighing 11 pounds.

"While concentrating on their assigned tasks, the WICEN (Vic) members anxiously awaited news of the birth and when the news came through were delighted for Peter and Di."

Graeme Tremellen VK3GPT took on a



A marathon effort by Carol Tremellen running the WICEN (Vic) Administrative Centre

supportive role to Carol, which he modestly described as "house boy" making cups of tea and doing the shopping, but of course his vast experience as a former WICEN (Vic) State Co-ordinator came into play.

Volunteer recollections

One of the volunteers was Maggie Iaquinio VK3CFI, who with Phil Pavay VK3YB flew on a small chartered commuter aircraft along with other emergency service personnel from Melbourne to Corryong in the northeast.

Her first encounter with the forest fire was flying through a thick band of smoke, some of which entered the aircraft's cabin. Fears were allayed when it was learnt that the pilot had done this on four previous journeys.



Maggie Iaquinio VK3CFI and 'battleboard'

On reaching Corryong the WICEN (Vic) team leader Phil VK3YB drew together Maggie, Greg Morse VK3FGM and Ken DeSilva VK3FKD to set up the rosters and arrange an orientation (show and tell) briefing with an existing team.

It was a whole new world of logging procedure, taking messages received on the radio, phone or fax directly to their addressee, and the informal family-like style of verbal communication with the DSE commanders.

One procedure was situation reports, or SITREPS, that were gathered every four hours, photocopied, and then distributed. Then there were also regular weather reports.

Maggie said, "The pressure was on to correctly record and log the messages and pass them to the correct person.

"It was made clear that the log book could be required by the Coroner, who in Victoria also has a responsibility to inquire into major fires."

There was a kind of bonding that occurred among the people at Corryong and elsewhere - with the fire fighters,

caterers, and support groups who came from all parts of Victoria.

A running theme in the accounts of many of the radio amateurs involved, which included Denis Babore VK3BGS and Keith Turner VK3CWT, both at the Ovens ICC, is that they quickly adapted and used their amateur radio skills to best advantage.

Alan Weeks VK3ML, who with Gordon Cornell, VK3FGC, were also at Ovens, reported that their task was to assist with communications in the broadest sense.

Alan VK3ML said, "From the outset we decided that we were there to help in whatever way would prove most useful to those responsible for the fire fighting operation.

"We had to familiarise ourselves with the way things were being done. To sit beside someone else who was operating the radio. Learn how to fill in an unfamiliar log. Not only that but to try to keep as complete a record as possible, in the log, of other people's conversations over the air."

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Australian summer wildfire: Linton VK3PC report continued

Continued from page 5

Alan later found himself on a second assignment in Orbst with Air Operations assisting with a Helibase, working with the Air Operations Officer in Orbst and providing a communications link with that office from the Marlo air strip.

Adam Scammell VK3YDF who was at Swift's Creek described the shifts as "very long and at times intense". However this was balanced against the good food, accommodation, the strong teamwork, and appreciation expressed by local residents who also pitched in to help.

He said two operators were responsible for three radios. The first was a command channel used for most of the traffic. The second radio was for trunking, which worked much like a telephone.

"You type in a number, which could be three or 10 digits long, to call a particular person. It indicated if the dialled radio was busy or in range," said Adam VK3YDF.

The third was a simplex fire ground channel for fire fighters at the actual fire. The sector commander was able to chat to each of his men, dozer operators, or whoever.

Mark Dods VK3XMU, who was deployed to the Ovens Airbase (and was

included in its move to Wangaratta) and later the Corryong ICC commented: "Whilst the log sheets and some of the DSE procedures were unfamiliar, some other things were not.

"Thanks to WICEN training and exercises, I was familiar with accurately handling traffic for a third party, the content of which I did not necessarily understand, and also with keeping a complete and accurate log in a busy environment.

"Neither of these skills are likely to be acquired by a radio amateur operating his station at home. Anyone who wants to assist in emergency situations is encouraged to join and train with WICEN."

A long-time WICEN (Vic) member, Graeme (Scotty) Scott VK2KE, is ideally suited to reflect on the differences between the latest WICEN deployment, and those of the past.

Scotty, whose involvement can be traced back to the 1962 fires in Melbourne's Dandenong Ranges, said that during the Ash Wednesday 1983 disaster, WICEN's involvement was fairly chaotic.

Scotty VK2KE said, "We were not highly organised then, and while the state burned it was a matter of being mostly told to sit, wait and see if we were needed."



Long time WICEN (Vic) member, Graeme "Scotty" Scott VK2KE with 40-years experience as a radio amateur providing emergency communications.

In the end, with the massive loss of communications, WICEN (Vic) was effectively deployed across the state to provide communications for other agencies, and liaison between agencies.

"In those days we tended to be radio amateurs using amateur gear backing up others, who either did not have communication systems, or theirs were overloaded," he said.

"That exact role did not exist this time, because we were using professional government owned radio systems, and effectively were co-opted radio operators handling messages.

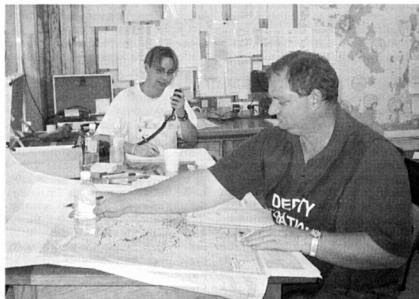
"We had to know who was out there, what they were doing and what can be done for them," said Scotty who with Leyland Sawyer VK2GBZ was assigned to the Ovens ICC.

They found themselves interacting with a range of people from DSE, Country Fire Authority, Department of Primary Industry, weather experts, and representatives of utility companies.

Scotty VK2KE said, "I found myself requesting that a power company disconnect two high power lines that were directly above fire-fighters in the Buckland Valley.

"It gave me quite a heady feeling that I was getting high voltage power lines cut off for ground crew safety."

Other radio traffic included the fuelling and servicing of bulldozers. At all times, he said, safety was paramount, and the bulldozers always had two men, one to drive and an off-sider to keep watch. They always had an escape route if the fire turned their way.



Adam Scammell VK3YDF on the microphone with DSE Deputy Operations Manager Mal Gibson at Swifts Creek

Red Cross provides vital communications link during recent Victorian bushfires

By Jim Linton VK3PC

Australian Red Cross, Victoria's RECOM (Red Cross Communications) service was put to the test during the recent Victorian bushfires and its unique capability saw it pass with flying colours.

The unit was established in Victoria just three years ago and consists of 19 radio amateurs who provide communications support for the Victorian Red Cross emergency services during times of disaster.

The RECOM members were activated on January 17th this year and over the following two weeks provided support for registration points in Beechworth, Bright, Holloways, Mitta Mitta, Eskdale and Omeo.

Red Cross staff and volunteers at registration points record the names and contact details of those who are evacuated from their homes, with information being entered onto NRIS (National Registration and Inquiry Service) and made available to family and friends concerned with their safety.

Australian Red Cross, Victoria Executive Director Andrew Hilton said that the RECOM team provided a unique service that was highly valued by disaster management agencies.

"In the event that phone lines are down and mobile networks are unavailable, reliable and secure methods of data transmission are a vital part of the emergency management process," said Mr Hilton.

According to RECOM spokesperson John Patterson VK3ATQ, two operators were stationed at each of the registration points over the 16-day activation period and in that time handled a total of 1500 registrations.

The field stations transmit 100% error-corrected data to a network which has seven fixed HF stations strategically located across Victoria at Mallacoota, Sale, Korumburra, Upper Beaconsfield, Wangaratta, Hamilton and Ballarat.

The network stations are totally independent of mains power and operate on a roster basis to provide continuous communications day and night, relaying data to the Red Cross State Inquiry Centre (SIC) in Melbourne, where the RECOM emergency operations centre is located.

Data is received from fixed or field

stations via HF radio and via telephone modem 24-hours a day. Multiple computers/modems/phone lines, auto-booting configuration and the use of the SIC uninterruptible power system backed by a 40 kVA diesel power plant ensure the smooth and unsupervised operation of the system.

RECOM spokesman John VK3ATQ said the key to the success of the operation was software that enabled data to be transmitted in a secure way.

"The network was maintained over the critical two-week period continuously under very difficult HF conditions. Due to the personal nature of the data, privacy is obviously paramount," he said.

Windows-based software featuring automatic network mapping (with GPS inputs), comprehensive logging of all message/file handling, encryption options, network time synchronisation and the ability to interface with many different types of modem (telephone, TNC, Iridium, GSM) was written by RECOM member Donald Patterson VK3BDP. It is used, together with a more robust variant of the Factor 2 protocol, to secure 100% error-free data transfer.

The software is designed to work seamlessly with NRIS and can transfer data when a voice link is not audible, the advantage over SSB being approximately 23dB. The mode of operation of the TNC is automatically and continuously varied to optimise throughput for any given conditions.

All stations are time referenced to within a second, and base stations usually run 100 watts. RECOM mobile data stations can even operate on the move to or from a Red Cross registration point. Data can be input through either keyboard or files.

During the bushfire emergency RECOM operators trained several local people in the use of the NRIS software thereby enabling more efficient deployment of resources whilst empowering local people to participate in the emergency management process.



Bruce Kidgell VK3BMK of Red Cross Emergency Communications (RECOM) at Beechworth.



Head of the Red Cross emergency communications, David Redhouse in the emergency communications centre which received the data traffic relayed by RECOM field stations through network base stations.

The success of the RECOM program has been such that the Red Cross is expanding the program, firstly to the Northern Territory and then to Tasmania.

RECOM members are required to train for an hour each week, and must be dedicated exclusively to the service - membership of WICEN is recommended but not obligatory.

When not activated for major events RECOM regularly provides communications support to Red Cross

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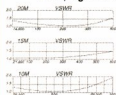
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Rugged, compact, Water resist. Intuitive keypad, DTCSS, CTCSS, pocket beep, 555 memory channels (14 high speed)



IC207H



Amateur 2m/70cm FM mobile transceiver.

Compact dual band unit with detachable control panel (OPC-600 cable required)

Frequency coverage (Unit: MHz)

VHF: Tx: 144-148 Rx: 118-174 *

UHF: Rx/Tx: 440-450

* Guaranteed 144-148

Output power:

VHF 50 W, 20 W, 10 W, 5 W selectable

UHF 35 W, 20 W, 10 W, 5 W selectable

TS-2000



3 operation platforms

1 — Traditional transceiver-full front panel

2 — "Silver box" for mobile use

3 — ARCP-2000 computer control

100 watts on HF, 6 metres and 2 metres, 50 watts on 70cm

TS-50

Permanent Base or Vehicle Mount

Very stable operation with 100 Memory channels

Outstanding performer

Loves to go DXing



27 Mhz and UHF
CB Radios

HF and UHF
LINEAR AMPLIFIERS

IC-R5

It's here

Small body — Big specs

Big Features

Wideband Receive

0.150-1309.995 MHz

You'll miss nothing

1250 Alpha-numeric channels

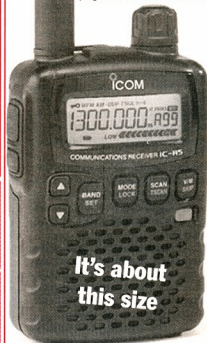
Dynamic Memory for easy naming and recognition

Easy power

AA's, DC, charge while listening

Computer friendly

plug into PC for more features



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The Amateur in today's Society

When I first became WIA Federal President I wrote an article on my thoughts on the future of amateur radio. I suggested that service to the community was for many amateurs one of the key cornerstones of the hobby. I was amazed when a number of people wrote in to suggest that that was a somewhat dated view of the hobby of amateur radio. The last few months have for me reaffirmed that there is still a large role for community spirit throughout the amateur radio community.

The 2003 Bushfire season

All of us are, I am sure, keenly aware of the impact of the recent spate of bushfires throughout Eastern Australia. I know that many amateurs throughout the Eastern states and Tasmania have offered their time and expertise in support of the fire fighting efforts. I am sure that you will all join with me in offering our heartfelt thanks to everyone involved, amateur radio operator, fire fighter, or just helper, in the superhuman efforts to protect life and property during these traumatic times. However not all amateurs were as lucky. In Canberra a number of amateurs were directly struck by the fires. I have not yet heard from other states but we can be sure that many amateurs throughout Australia have also suffered. I am sure that you will also join me in wishing them all our deepest sympathies at this time.

The Future of the 70 cm band

It is ironic that another issue has been keeping me busy over recent months – the increasing demands on spectrum in the 70 cm band for the use of state emergency services. In late 2002 I

attended a briefing at ACA where the New South Wales emergency services set out their future communications needs. We have known since events in Western Australia that the emergency services have been looking at the 70 cm band as the logical place for their statewide emergency communications needs. None of us like losing amateur radio spectrum. However, as the current bushfire season and recent world events suggest, the need to support state wide emergency services is becoming ever more critical.

For the last few years the various Divisional Technical Advisory Committees have all been actively working towards a 70 cm band plan that can see amateur operations able to manage in a reduced allocation of spectrum. The current NSW request, along with an anticipated request for emergency service spectrum in Victoria, makes the contingency plans that have been drawn up all the more relevant. At this stage the requests have been aimed at small segments of the band. However I am sure that over the next few years that the pressure will continue to increase to release more of the 420 MHz to 430 MHz portion of the band to emergency service use. Obviously we cannot stand in the way of the needs of the emergency services. I have suggested to the ACA that in exchange for the losses of amateur spectrum that we might be given more secure tenure of some other part of the band. I will keep you informed of developments as they occur. In the meantime I will be making updates and information on what is happening available on the WIA web site.

More on the Foundation licence

In early 2003 the RSGB president Bob Whelan will visit Australia. He has indicated that he will happily talk to groups about the impact of the foundation licence on amateur radio activities in the UK. I know that many of you have severe reservations about lowering the bar to entry into the hobby that is implied by the introduction of the foundation licence. However if you should get the chance to hear what Bob has to say then please do try and meet with him. The story from the UK is one of real success in attracting new blood into the hobby. If we were to achieve the same levels of interest here as has been seen in the UK then we could well expect to see hundreds, if not thousands of new amateurs operating within a year or two of its introduction. With the already noted decline in amateur radio numbers here in Australia it may be that a foundation licence will make the difference between amateur radio surviving into the 21st Century or not. I for one will be talking to anyone that is prepared to listen to try and gain a greater understanding of what such a licence can offer to the hobby here in Australia. Today's society is a very different one from that when the current examination scheme was established. If we fail to adapt to the changing needs of today's society then the only people that we can blame for the demise of amateur radio will be ourselves.

Anyway I will bring this month's note to a close and wish you all 73s. I look forward to hearing from you on any amateur radio matters.

ar

Red Cross communications link continued

Continued from page 7

Emergency Services in search and rescue, emergency catering and first aid, providing communications in areas where land-based or mobile communications are not available.

Other points of interest:

- At the height of the wildfire threat to Omeo all power and phone

services were unavailable. RECOM was tasked to handle traffic for St Johns Ambulance and formally requested by the Department of Sustainability and Environment to be prepared to act as a backup to the agency

- Not one word of voice communication on radio was

uttered for the 16 days/24 hours per day that RECOM operated

- RECOM members involved were: VK3XSW, VK3OG, VK3AIG, VK3ANP, VK3ATQ, VK3AUO, VK3AXH, VK3BMK, VK3BPD, VK3BQS, VK3BVE, VK3BWT, VK3GJB, VK3KDS, VK7MO.

ar

Lady Julia Percy Island IOTA OC-251

September 27-30, 2002

By Peter Forbes, VK3QI

I had just sat down to watch the 8.30 pm Sunday movie on television in mid-August 2002, when the phone rang. "Tom VK3ZZ here. How would you like to go to Lady Julia Percy Island with me and a friend?" After I picked myself and the phone up off the floor, 3 seconds later, I was going!



For many years, IOTA chasers had noted that VK3 West group, Lady Julia Percy Island had never been activated. It appeared on most maps of VK3, looked close to the coast and should have been a breeze to activate. That belies the facts.

LJP is an island lying some 11 km off the coast of VK3 near the township of Port Fairy at the western entrance to Bass Strait, one of the most turbulent areas of ocean in the world. It is approximately 2 kilometres long and 1 kilometre wide, flat topped with incised and sheer cliffs 30 to 40 m high around its perimeter. The island is basalt rock with a fertile top soil layer approximately 0.5 metre thick, the weathered remains of the old volcano flows on the mainland. The rock is estimated at 7 million years old. The surface area is 129 hectare, there are no trees, just a few low bushes and a thick layer of grasses and bracken (low ferns).

The island is constantly under the influence of strong winds and plenty of (horizontal) rainfall.

The only means of access is at the northeast end, where an exposed cove has a tiny rock landing spot accessible only when the winds are not blowing from west through north to the east. Alternatively, for a price, you can fly by helicopter, but the nearest helicopter is around an hour's flying time away.

The island is a wildlife reserve, home to the largest population of Australian Fur Seals, estimated at 20,000. It is also a protected breeding area for Great White Sharks, has a very large colony of the burrowing sea bird, the Short-tailed Shearwater (also called the Mutton bird), many other species of birds including the Peregrine Falcon and Tiger snakes which have evolved quite differently from their relatives on the mainland, due

to the thousands of years of isolation.

LJP (also known as Deen Maar) is of great significance to the Gunditjmarra people in the Aboriginal Dreamtime and is home to some significant Aboriginal cultural sites and artifacts.

Needless to say the island, administered by Parks Victoria, is of great ecological importance and is off limits to all except those who can demonstrate a scientific reason for visiting the island for research or management purposes. Recently, legislation has been introduced to make the water between the island and the mainland part of a Marine Park as well.

Over the years, many hams had tried to obtain permission to visit the island, but requests had not progressed, due to the large amount of "red tape" involved.

So the opportunity to visit LJP really came out of the blue. Paul Stampton, VK3KXG, an amateur ornithologist, had gained permission after many months of negotiation to undertake a logistical study of the possibility of undertaking some scientific research on the migratory Shearwaters of LJP. These birds were due to arrive at nesting sites on LJP after their long trip from the northern hemisphere via Siberia, in the last week of September.

Paul previously lived on French Island (OC-136) and had worked as a park ranger. He had also undertaken a study that culminated in the satellite tracking of the Shearwaters from Victoria and



Equipment for loading into the helicopter

NSW to Antarctica and the publication of a paper on the experiments. As a result of his previous research work, Paul had the contacts necessary to gain the permits required to access LJP.

Naturally as a radio amateur, this was a fantastic opportunity to invite along a small group of amateurs to help with his scientific work and to activate the island for the IOTA Program.

After discussions, it was decided to limit the number of persons to 4 and Jack, VK3WWW, an experienced portable operator, was invited to join the group. Jack had previously expressed interest to me in operating from LJP and we had even discussed some of the logistics issues.

After studying some high resolution aerial photographs and discussing the island with some of the Parks Victoria rangers who had been on the island, it was decided to place the camp site near to the landing site to minimise the amount of equipment movement. Remember that everything had to be moved up the 30 metre cliffs and we were informed that there was a lightweight flying fox capable of carrying a maximum weight of 20 kg, but in an unknown condition. We also knew that a small hut with emergency provisions, some 2 by 2 by 1.5 metre high, had been placed on the island several years ago for emergency shelter in case of very poor weather.

With our four participants decided, we met two weekends before our planned operation date at Tom VK3ZZ's country property. We assembled some of the antennas and discussed the equipment and shelter required. After this initial meeting, we used emails extensively to coordinate our plans. From the outset, weight was going to be an issue, not so much the total weight which a boat could carry, but restricting everything to around 20 kg maximum per item. Our initial total weight was around 800 kg and we needed to prune this down, without compromising safety, accommodation, possible breakdowns in equipment and trying to maintain a schedule of 2 stations for 18 hours per day.

Our initial plan consisted of chartering a boat, the Michael J IV, which made regular sight seeing tours around the island to view the seal colonies, subject to weather conditions of course. The boat would anchor 100 metres offshore



R44 Astra Helicopter after final trip



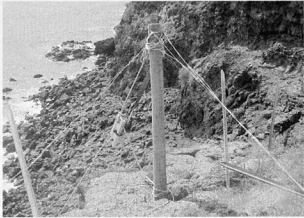
Mutton Bird next to the generator

and, using a small dinghy, we would transfer the equipment to the landing and then move it up the 30 metre cliffs.

On the Wednesday night before departure, the boat's captain informed us that he would not be able to access the island until at least the following Monday, due to the forecast high winds, large ocean swell and wind direction from the north/west, meaning no access to the landing spot.

In our initial discussions, I had indicated that I was prepared to fund a helicopter in the event that the boat option did not proceed.

So Paul, VK3KXG, hurriedly called



Flying fox, seals below on rocks

one of the helicopter charter companies at Port Campbell that specialise in flights around the world famous Twelve Apostles rock formations east of LJP.

The pilot was extremely friendly and helpful and our transportation was arranged for Friday morning 27th September, 9 am pick-up at Port Fairy.



Seals at landing site



Landing site

The only catch was that the maximum length of any item carried would be restricted to just over 2 metres. This meant some quick hack-sawing of masts and antennas to fit this length restriction, before departing the 4 or 6 hour drive from Melbourne and Leongatha (east of Melbourne) to Port Fairy, on the Thursday afternoon.

Our basic equipment decided on was:

- IC706 and TX5500 amplifier, MFJ 4245 switch mode Power Supply to 3 element tri-band yagi on a 5 metre mast.

- FT100 and TX5500 amplifier, MFJ 4245 switch mode Power Supply to Hustler 5BTV vertical as a ground plane and /or a tuned feeder 13 metre per side droopy dipole on a 10 metre telescoping mast.
- DX70 and 60AH Sealed Lead Acid battery to a kite supported long wire as a backup.
- The equipment was to be transported in round, airtight plastic drums, which could be easily carried up cliffs or run down a flying fox without too much damage to the equipment.



Operating tent and shelter

turned out, the brilliant Honda used only 40 litres for 60 hours of operation so we were oversupplied with fuel.

Equipment for shelter consisted of low wind resistance / low profile tents for sleeping and a large touring tent for the operating position. After the first night, the high winds and driving rain meant that the touring tent was restricted to one operating position, as the seams were leaking water in the driving rain. The remaining operating position was moved to the emergency hut (which with a height restriction of 1.5 metres, meant you had to sit down all the time).

Safety

To quote from Parks Victoria's safety plan for LJP:

"Be aware of the extremes in weather conditions - always bring wet weather and warm clothing no matter how hot it is when you set out."

"At least two people should be on the island at any one time for safety purposes"

"Do not walk through shearwater rookeries. Falling in these areas may result in knee or ankle injury."

Essentially, in moving around the island, every footstep you take must be tested before putting your foot down firmly. The island, especially where we were camped, is literally pitted with shearwater burrows. At night, we insisted that each team member wore one of the excellent Super-bright LED headband lights to keep both hands free, in case of a fall.

It took 4 helicopter flights to move the equipment and operators to the island. The 15 minute flight was directly into a 50 knot wind and the 5 minute return journey was downwind. So by 1 pm. we had all the equipment on site and were busy setting up antennas and tents in the 50 knot winds, punctuated by rain squalls every 30 minutes or so. Using the helicopter was a blessing in disguise, as moving all the equipment (some 500 kg) up the cliffs after a boat trip, would have taken us all day and exhausted us.

Things went smoothly, due in no small part to having practised setting up the antennas 2 weeks earlier, and at 4 pm local time (0600Z) we hit the air waves on 20 and 15 metres.

It soon became apparent that we would have mutual interference problems, as the antennas were too close together. After the event, we now know

Power source was a Honda EU20i generator with an EU10i as backup.

Initially, we had planned to take an additional larger tri-band antenna and a DX1 linear, but weight restrictions forced us to rethink this idea.

Fuel use for the Honda EU20i is stated as 1 litre per hour, so 80 litres of fuel was needed. As it

that we could have had the antennas up to a kilometre apart!

So first thing on Saturday morning, we set about gathering together all the runs of coaxial cable we had brought and managed to get about 200 metres separation of the antennas. This solved the problem to the extent that we could now operate two rigs at the same time. In fact, we were able to work CW and SSB on 20 metres simultaneously, much to the amazement of some European operators who worked us long path on CW and SSB within a few minutes.

The only other problems encountered with equipment were the failure of earth leakage safety protectors to work on the generator (a design aspect of the generators that we subsequently have discussed with Honda).

There was also a residual ignition noise that we ended up solving by placing some clip-on ferrites over the power cords at the generator end.

The Honda EU20i was simply brilliant, sitting out in the open with driving rain and wind, beating its little heart out. The wind was so strong that it blew water up into the air vent in the top of the petrol cap, but the placement of an inverted tin can over the cap soon fixed that. To hear the generator inverter go under load when sending CW was fascinating. You could easily read the Morse code by listening to the engine revs, despite the howling wind and endless squawking of the nesting Shearwaters! All the while, the output voltage remained at a steady 242 volts.

The noise of the generator was not disturbing, in fact the mutton birds would settle down next to their burrows scarcely a metre from the generator. Interestingly, the fuel consumption was around half that expected, despite running the generator in normal mode (not Eco mode) the entire time, with around 600 - 800 watts of power being generated.

The Bands

From the outset, we planned to use the IOTA frequencies exclusively, split frequency operation as the norm and no nets. Our aim was approximately 3000 contacts in the 60 hours operation planned and the emphasis would be on working European stations, who have the largest and keenest number of IOTA chasers, especially long path on 20,17 and 15 metres from 0500Z to 0900Z. We



CW Operating position

knew from experience that this was the prime time for European DX.

Our strategy worked. The following contact breakdown occurred.

TOTAL QSOS—2883.

2 m	PHONE	1	CW	0
10 m	PHONE	158	CW	113
15 m	PHONE	173	CW	31
17 m	PHONE	88	CW	171
20 m	PHONE	1492	CW	302
30 m	PHONE	33	CW	220
40 m	PHONE	2	CW	87
80 m	PHONE	12		

Number Of Countries Worked—75.

QSOs worked by regions of the world:

AFRICA	7
ANTARCTICA	2
ASIA	716
EUROPE	1281
NORTH AMERICA	661
OCEANIA	195
SOUTH AMERICA	21

Total number of hours of radios setup on island.

0600Z Friday to 0000Z Monday
= 66 hours

Total number of hours an actual operator on deck and listening/operating.

0600Z Friday till 1600Z Friday
= 10 hours

2100Z Friday till 1400Z Saturday
= 17 hours

1900Z Saturday till 1530Z Sunday
= 20.5 hours

1930Z Sunday till 0000Z Monday
= 4.5 hours

TOTAL = 52 hours

(Remember some of these hours during local daylight were for Scientific

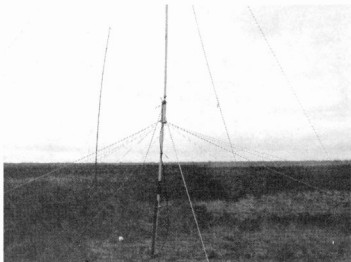
observations and exploration)

Our only disappointment was the number of known active IOTA chasers in South America and Africa who did not make it into the log. Checking on the various Internet IRC chat channels after the event, it was obvious that if you had been at all active during our operating period, you would have worked us on at least one of the bands or modes.

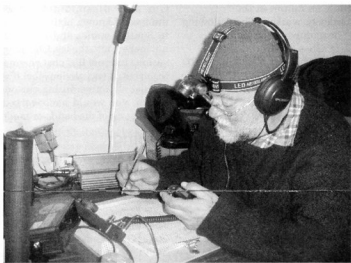
Timing

Timing is everything. One of the highlights of the trip was the arrival of the Shearwaters. These birds nest on LJP from late September, making a nest in their burrow and laying just one egg. They then head off south to Antarctic waters to feed on krill during the Southern Hemisphere summer period. Come April, as the weather becomes colder, they leave the island vicinity and fly north to the Arctic for the northern summer. Late August they leave the Arctic, head down over Siberia, across the equator, down the east coast of Australia, round the south east corner of Australia at Gabo Island (OC-196) and arrive at LJP (and other Bass Strait Islands) at the end of September.

During Saturday 28th (our second day of operation) they would have arrived off shore and settled on the water. Exactly at sunset, (as the last ray's disappeared below the horizon at the 50 m flying height) they arrived on the island as a black sea of thousands of birds, all busily heading for the burrow that they had left some 6 months before. To see a bird unerringly land and head



Ground plane with dipole in background



Tom VK3ZZ operating

for its burrow is an astounding and wondrous sight.

On the same night around 1 am, as I shut down the generator and headed for my tent after working a dog pile on 20 m CW into Europe, the sky was lit up with an Auroral display. It covered the southern half of the sky. A fascinating sight and also a warning sign. We would be in for a large Geomagnetic storm within the next 36 hours. Sure enough, from Monday morning after we had shut down at 0000Z (10 am. local) and begun to pack up, the A index shot up to 50+ and stayed that way for the rest of the week. Our XYL friends VE7YL, VK3DYL, VK4SJ and JR3MVF, operating

from the South Cook Islands that week, experienced the bands with one of the worst and most prolonged disturbances so far in cycle 23.

So we hit the airwaves at just the right time, with the A index below 10 and the Solar Flux around 150, sufficient to give us good openings into United States and even Long Path to Europe on 10 metres.

Operating Conditions

Unlike many have found, behaviour by European operators was excellent, with a quick rate of contacts being maintained with just a 5 kilohertz spread of stations. Rules were obeyed and when working by numbers, most stations complied.

One glitch we had on the first day was a change of operator during a number run and due to a misunderstanding, the numbers reversed during the run. The mistake was taken in good humour, judging by the comments on the DX packet clusters.

We tried out some new folding aluminium tables that have a removable slatted top (like Venetian blinds), have six legs for stability and fold up into a bag some 70 centimetres long and 25 centimetres in diameter. With a weight of just over 4 kg, they performed excellently and are recommended for future use by other IOTA operators. Similarly folding chairs by Coleman that fold up to a similar sized package were used. They are more upright than conventional camping chairs and provide good back support for long periods of SSB and CW operation. Speaking of CW operation, trying to send high speed CW with rain dripping on the logs, the strong wind flapping away on the tent walls and the continuous squawking of the Shearwaters a few metres away, makes for a challenge even with good sound proofed earphones.

Both the FT100 and IC706 rigs performed faultlessly, with the FT100 and its 500 Hz filter being used principally for CW contacts.

The TX5500 amplifiers with their capability of 350 W PEP output worked and matched extremely well to the MFJ 4245 switch-mode power supplies, which are light weight 45 amp/13.8 volt power houses.

It is always difficult to judge the performance of antennas in such conditions, but our experiences suggested that they were good enough to maintain order on the operating frequencies, given that those who wanted to work us were all looking our way.

When the wind subsided on the Sunday, Jack 3WWW, was able to successfully launch his kite antenna with a long wire for 30 m. We had many local (VK east coast) contacts with outstanding results. Keeping a kite up in such conditions, especially at night, is difficult, as sudden wind squalls can easily break the tether lines.

Food was no problem. Fires are not allowed on the island, but a small gas cooker was used to boil water and make up various soups etc. The use of flat foil vacuum packed meals makes food

preparation and storage easy and safe. We carried to the island sufficient water for 5 days supply, so ended up with a surplus.

Packing up

With the impending Ionospheric storm conditions and weather conditions favourable to leave the island by boat, we determined to close down at 0000Z Monday (10 am. local), allowing 5 hours to dismantle everything and move it down the 30 metre cliff by flying fox. Absolutely everything down to the last food scrap we had brought onto the island, had to be removed. It took all of those 5 hours, including 2 hours just to swing things down the flying fox in 20 kg loads. Hanging out over the cliff edge, supported by a safety strap around one's middle and seeing a \$2000 generator bumping its way across a rock ledge and then swinging down a rope at 45 degrees, makes you appreciate the importance of good planning.

Before moving the equipment down, we had to gently and carefully disturb the seal colony into moving back off their rocks into the sea. If seals are startled and especially if you get between them and the sea, they are just as likely to panic and jump off the rocks and injure themselves. Fortunately we were able to achieve this with no injuries to the seals (or ourselves).

Things were loaded onto the boat via the small dinghy and after one hour motoring in a 3 metre swell, we were back in Port Fairy, after a most successful weekend.



Sleeping tents

Helpers

No expedition can be successful without the assistance of helpers.

David VK3EW acted as our unofficial pilot. We had access to him via mobile phone and could get him to spot us on various frequencies quickly and accurately. This meant maximizing the chances of operators working us when the bands were open. David also assisted a number of South American / PY operators in working us. A partnership has grown up over the years between PY amateurs and VK3EW and VK3QI to help each other with DXCC and IOTA operations, on what are essentially opposite points of the globe across the South and North Poles.

Russell VK3ZQB a life long resident of Port Fairy assisted us with storage of our vehicles and transportation between the township and airport. He did this willingly and at short notice. His stories about seeing LJP upside down on the horizon (due to temperature inversions) from Port Fairy and using this to predict some of his record breaking VHF/UHF contacts was fascinating.

Ross Keogh VK3MY, from Strictly Ham Pty. Ltd. graciously provided us with 2 MFJ power supplies at cost.

Keith VK3FT, who would have loved to have gone to the island, but family commitments prevented him, loaned us one of the TX5500 amplifiers.

Rob Hill, a friend of Tom's, willingly lent us his EU101 generator as a backup unit.

Barry, from PremiAIR Helicopters was fantastic. The 3 others in the group were first timers in a helicopter and his manner and competence in flying in strong winds and driving rain was a great confidence booster for them.

Gary, the operator of the charter boat Michael J IV, was also most helpful with advice beforehand and patience whilst we took the 3 hours to move and load the boat on the return journey. The weather had been so bad immediately prior to our trip that this was his first trip out to the island in over 3 weeks.

The German DX Foundation made a generous donation of US\$100 towards the cost of the expedition.



Descending the cliff



View from flying fox of dinghy landing



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0 - NRE	Tom Walsworth VK3ZZ / VK3OK
(see - Red Pine Co)	John (Jack) Stanniam VK3JWH
CH - Moun	
P	
PINP	

Shelter Honour Roll



Flying fox from landing

Next Time

Will there be a next time? Whilst on the island we noted that recently John Arnould (ex VP8CGK, Bird Island, South Georgia 1991-1993) had been on the island studying the Fur Seals as part of his University research work. John also spent 3 months with the French Antarctic group on Crozet Island at the beginning of 2002.

So there is always the possibility of suitably qualified people accessing the island and requiring support crew.

With hindsight, we now know that if required, better positioning of multiple antennas may be achieved on the island.

Careful planning and attention to placement of power leads and coaxial cables and the use of clip-on ferrite for RFI prevention and isolation is also warranted, where a suitable earth is difficult to achieve.

Travelling there by helicopter is definitely the preferred method to save on hauling equipment up the cliffs. Departing by boat is relatively easy,

provided the weather conditions are just right.

Better earphones would definitely be an advantage and more thought into the interconnectivity of headsets, microphones and keys between the individual transceivers, would be of benefit. The provision of break out boxes for these modern transceivers that use RJ series plugs and sockets, but still use 3.5 and 6.5 stereo and mono for speakers etc., would make life much easier.

Why the special call-sign, VI3JPI?

Besides being a great call-sign for IOTA operations, LJP was first named by Lieutenant Grant of the HMS Nelson on December 6th 1800. His original diary refers to the island as "Lady Julia's, after Lady Julia Percy."

Allowing for the weeks that it took the Nelson to transit to Sydney, then the 9 months for the news to find its way back to England and through the British

Parliament, it was well into 1802 before the name Lady Julia Percy Island began to appear on Admiralty Charts. Hence 2002 was the 200th anniversary of the island's appearance to the world. We know for sure that Captain Matthew Flinders' diary of 20th April 1802, during his circumnavigation of the Australian mainland, refers to "we bore away from the land. A clifly, flat-topped isle, Lady Percy's Isle was seen". Sometime later the name was changed to the full name of Lady Julia Percy's Island, but extensive research fails to reveal just when this occurred.

QSL Information

Direct with SAE and postage to QSL manager:

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Australia 3953 Or Via the VK3 Buro

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The Operators

Paul Stampton VK3KXG amateur ornithologist, former employee of Parks Victoria and TAFE lecturer in the Diploma of Natural Resource Management. Currently Science Coordinator and teacher at a private school at Leongatha, east of Melbourne.

Jack Bramham VK3WWW, a locksmith with Corporate Locksmiths (ex Telstra Corporation), a keen ARDFer over many years, currently WIA Federal ARDF Coordinator and an experienced Field Day operator. Jack loves to fly kite antennas.

Peter Forbes VK3QI, a Physics and Electronics teacher at Ashwood College, a government school in Melbourne, a keen CW operator (only needs P5 on CW for the lot) and particularly interested in Upper Atmospheric Physics and Ionospheric propagation.



From left: Jack VK3WWW, Tom VK3ZZ, Paul VK3KXG, Peter VK3QI

Tom Marlowe VK3ZZ (also VK3OK), a retired commodities trader and property developer, who currently resides near Leongatha east of

Melbourne. A keen rag-chewer on the ham bands and a fanatical bridge player. Never produce a pack of playing cards near him!

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A "Kalitron" Gate Dip Oscillator/Crystal Checker

Drew Diamond, VK3XU,
45 Gatters Road,
Wonga Park, 3115.

In radio measurements, one of the most effective simple tools is the well-known grid, or gate dip oscillator (GDO). In the hands of a proficient user, it is possible to determine the resonant frequency of lumped and distributed tuned circuits and radiators, calculate the value of pF capacitors and μ H inductors, and sniff powered circuits and estimate their operating frequency. There are many other uses for the GDO. Indeed, since the late 1940's, almost every radio handbook has published details of how this versatile instrument may be applied to amateur work.

A problem with HF dippers is that it is sometimes difficult to obtain a good clear dip, particularly when working with low-Q circuits down near 1.8 MHz. Our English colleagues have had better results from a push-pull pattern (Refs. 1 and 2). There is some debate about the naming of this oscillator type, but the consensus is that it is called the "kalitron". Following their example, my own experimental Kalitron dippers for the 30 to 450 MHz range worked very satisfactorily, and so it was decided to try a HF version also. Frequency range of my model is from 1.6 to 55 MHz in four overlapping coil ranges; (A): 1.6 to 3.9, (B): 3.7 to 9, (C): 9 to 22, and (D): 22 to 55 MHz. This oscillator also makes a very handy quartz crystal tester, and will excite both fundamental and overtone crystals in the 1.6 to 55 MHz range. If needed to power external circuits, the oscillator can deliver a 1 mW signal, extracted with a two or three-turn link coil.

Circuit

The desired characteristics of a dipper are; wide frequency range, constancy of gate (or grid) current indication across each coil range, absence of false dips, an easily observed meter deflection when coupled to passive and active circuits, good frequency stability and resolution, and sufficient output signal to power other devices. Two FETs are cross-coupled in push-pull configuration (Fig. 1) with the variable L/C tank between the drains of the devices, which results in reliable oscillation, and good amplitude constancy across each coil range. When the device is oscillating, the amount of rectified gate current is proportional to

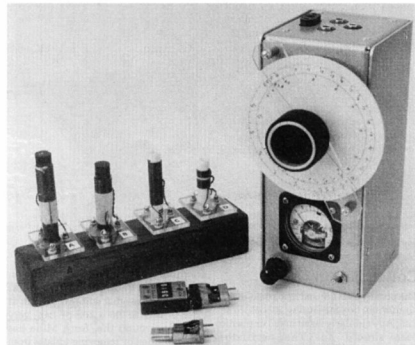


Photo 1. The finished Dipper with Coil Set and Crystal adaptors

the 'strength' or amplitude of the signal, and is thus indicated by the 100 μ A moving coil meter.

The usual explanation for the "dipping" phenomenon is that energy is "absorbed", or "sucked" from the oscillator when the GDO frequency is swept over that of a passive circuit. Rather, for lumped resonant circuits (coils and capacitors) and distributed resonant circuits (lengths of low-loss transmission line), what I think happens is that; when the field of the oscillator coil is at or near the resonant frequency of the passive circuit, and where sufficient coupling exists between these

two circuits, the passive circuit responds by setting up its own field, which returns energy to the oscillator that is out of phase with the original signal, and the amplitude of oscillation is thereby reduced (which accords with Lenz's Law). The only thing that does any "absorbing" is the loss, or resistive component of the passive circuit, because (for the same degree of coupling), the higher the 'Q' of the passive circuit, the deeper the dip. The "absorption" explanation does apply to antenna work, where energy is taken from the oscillator by the radiation resistance.

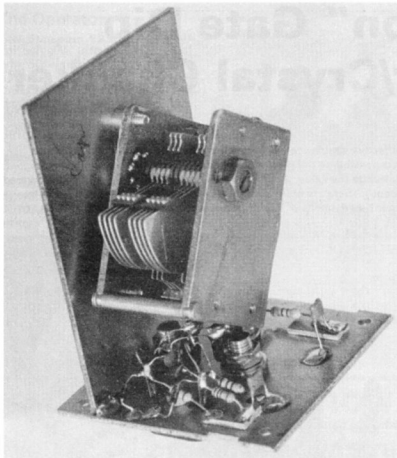


Photo 2. Oscillator Sub Assembly

Construction

The prototype is housed in a home-made aluminium box measuring 70 x 65 x 160 mm. Any similarly sized metal or plastic case should do. The oscillator components and variable capacitor are accommodated upon a sub-assembly made from double-sided printed circuit board, as shown in Photo 2. Note how the variable capacitor has been oriented so that the capacitor's tags may be soldered directly to those of the banana sockets, which receive the plug-in range coils. The two FETs and associated parts are soldered together 'ugly' style with their leads as short as reasonably practicable. The solder tags of the banana sockets make suitable tie points for the drain connections, and the two pins of the style 'D' crystal test socket serve for the gate connections. A suggested layout is depicted in Fig. 2.

The variable capacitor, an ordinary Roblan dual-gang 90 pF is a type that

frequently shows up at hamfests. Pictured in Photo 3 are two other common makes that suit this circuit; at right is an MSP 95 + 200 pF cap-very common around the 'fests. Mine has been modified by removing 4 plates from the 200 pF gang, which makes it a 90 pF gang-the slight difference in maximum capacitance does not noticeably alter operation (note that the centre-tap of the coil is not by-passed to chassis). At left is an English Polar 80 + 80 pF capacitor, which would also suit. Check that your capacitor has no faults, such as shorting plates, or foreign particles caught between.

On the two lower frequency ranges, the coils need to be about 200 and 37 μ H. To obtain this inductance it was found necessary to wind the coils upon lengths of loop-stick rod material. Due to the better coupling afforded by the rod, their inclusion makes the dipper much more responsive when dipping

circuits on the low ranges. Various makes of loop-stick were tried-even bits salvaged from defunct transistor radios. Interestingly, all yielded very similar values of inductance for the same number of turns. Fortunately, the rod type which provided best Q is available from at least one well-known stockist (Parts below). To cut a rod to length; file or grind a shallow groove around the circumference. Place your thumbs each side of the groove, then snap it, as you would break a stick.

A suggested method of fabricating the coils is illustrated in Fig. 1. The base should be acrylic (perspex), ABS or other low-loss material. Three banana plugs are fitted into 1 BA threaded holes-or they may be glued into close-fitting holes. Remember to pre-tin the sockets before fitting them in place. Use one of your drilled coil bases as template when laying out the corresponding banana sockets on the aforesaid sub-assembly. Windings for coils A and B may be started by attaching a little tag of tape-like a flag, about 60 mm from the end of the wire. Lay the tag flat upon the rod where the coil shall go-then wind on turns so that they lie upon the tape. Have some extra tape on hand to secure the end of the winding when the coil is complete. Coils C and D are wound upon lengths of genuine Biro (TM) ball-point pen tube (available from stationer's-coils wound upon this workable material have very good Q). To anchor the start and finish of the coils, drill a #55 or 1 mm hole across the tube diameter at the distances indicated. The 10 mm loop-stick rods for coils A and B, and pen tubes for C and D are epoxy glued into corresponding holes drilled in each base.

A 6 : 1 ball-type reduction drive is recommended for fine control of frequency. The capacitor spindle is connected directly to the drive-so take care with their alignment. My dial is a 90 mm diameter disc of 1.3 mm aluminium sheet, which has received two coats of white undercoat spray paint for the calibrations. A suggested cursor, made from 3 mm clear perspex with a line scribed along its axis, is shown on Photo 1.

Calibration

If desired, operation of the oscillator may be confirmed at the sub-assembly stage (Photo 2) by temporarily hooking up the

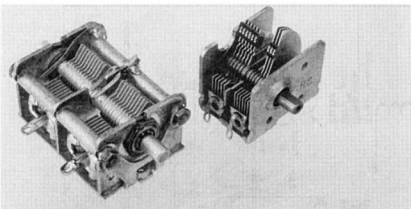


Photo 3. Possible variable capacitors: left, English Polar 80 + 80pF; right, MSP 95 + 200pF. The dummy cursor may be visible at the bottom.

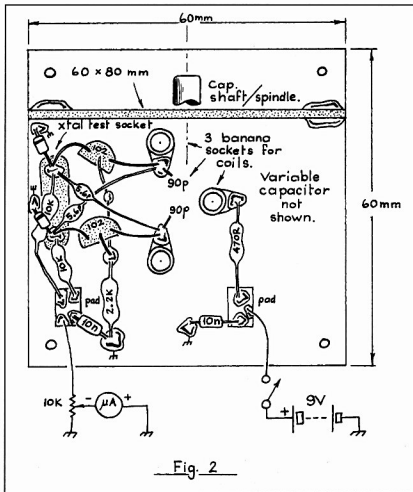


Fig. 2

Figure 2. Prototype layout

sens(itivity) pot, meter and battery. Plug in each coil, and with the means available, check their ranges, which should be similar to those obtained for the prototype, and some small overlap between. You should observe at least full-scale meter deflection, with no false dips or drop-outs across each range, but perhaps a slightly lower reading at the low frequency end. When satisfied with the frequency ranges, the coils may be painted with coil-dope or clear nail varnish- which causes a slight decrease in frequency.

With a compass and fine black pencil, scribe two concentric circles upon the dial disc in order to receive calibrations. On final assembly and test, and when the coil ranges have been checked again: apply calibration markings for each coil range. I suggest pencil, as any errors can be easily corrected. Try not to crowd in too many calibrations, but mark the 1.6, 1.7, 1.8, 1.9, 2.0, 2.5, 3.0 and 3.5 MHz points, then the whole MHz to about 30, then every 5 to about 55 MHz. A dummy cursor, which has a slot rod-sawed along the axis to admit the pencil point, is suggested as a useful aid. With that done, remove the dial disc and apply a coat of clear paint lacquer, which will darken and fix your calibrations.

Operation

The most common application is in 'dipping' lumped tuned circuits. For plain (solenoid) coils, place the oscillating dipper's coil near the test coil, either end-on, or parallel. Set the meter reading to about 80 % of full-scale, then sweep the dial through the estimated resonant frequency- you should observe a distinct dip in meter reading. For best accuracy, the distance between the coils should be the greatest that still produces an observable dip. Circuits with a toroidal coil may be measured by placing the dipper's coil near or between the two leads of the coil (which forms a one-turn loop).

To use the dipper as an external oscillator for various tests, place a two or three turn hook-up wire pick-up loop near to, or over the dipper's coil. Available signal level is about 1 mW in 50 ohms, which may be varied by altering the distance between the coil and the loop.

To check a crystal, insert the unit into the test socket, plug in the appropriate range coil, then sweep the dial over the

crystal's marked fundamental or overtone frequency. For good crystals, the meter needle should flick upwards markedly as you approach the crystal frequency, and thus cause the oscillator to 'pull' into VXO control. Shown in Photo 1 are suggested adaptors made from defunct style 'D' cases for testing style 'K' and FT-243 crystals.

When used with "energized" circuits, such as an oscillating tank coil, or an RF amplifier coil, place the oscillating dipper coil initially about 100 mm from the circuit under test and sweep the dial around the estimated frequency. The dipper's meter will flick upwards as it is swept over the frequency of the energized circuit. There are too many other applications for our dipper to be covered here, and so it is hoped to follow up with more information at some later date.

Parts

The ordinary components are available from our usual electronics suppliers, including Altronics, DSE, Electronic World and Jaycar (usual disclaimer). As far as is known, there are no suppliers of new Roblan 90 + 90 pF capacitors, but they are not rare items. Ask your radio mates, or check out the next swap-meet for appropriate parts. Similar for the 100 μ A meter (a 50 μ A will do), ball-type reduction drive and the crystal socket. MSP 95 + 200 pF variable caps (modify as noted above) and 200 mm lengths of the recommended loop-stick material are available from Electronic World (03 9723 3860- will answer mail orders).

References and Further Reading

1. "The G3WPO FET Dip Oscillator Mk2"; Tony Bailey, G3WPO, Rad Com Apr. '87.
2. Test Equipment for the Radio Amateur, C. Smith, G4FZH, RSGB.
3. "A Gate Dip Oscillator- or GDO"; M. Eunson, VK4SO, ARA, Vol. 8 No. 13.
4. "The Anatomy of a Solid-State Dipper"; F. Lewis, ex W1LKV, QST, Dec. '72.
5. "The Grid Dip Oscillator"; J. Buchanan, K8WPI, CQ, Feb. 2000.
6. "What Can You Do With a Dip Meter?"; QST, May 2002.

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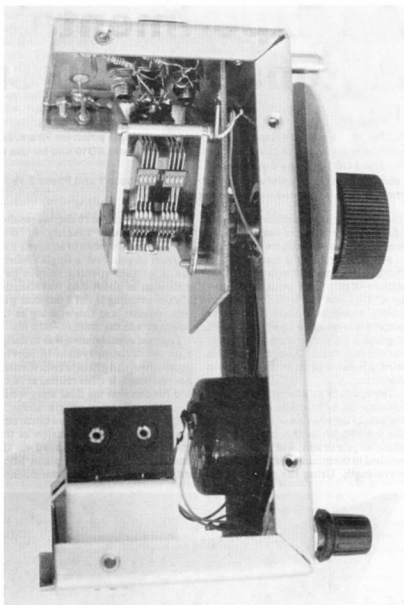


Photo 4. Inside view of the finished dipper

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An Experimental Patch Antenna for 70 cm

Part 2

By Greg Chenco VK3BLG

Further to the encouraging results in building a single patch for 70 cm, I decided to design and build an array of patches specifically for the 70 cm uplink for AO40 and AO10 and for use with other satellites such as FO20, FO29 and UO14 for the downlink.

I decided initially to build an array of 4 patches. Photo 1 and Photo 2 show one of the development arrays. Photo 3 shows the feed described in this article.

The first design consideration was to optimise the spacing of the patches to achieve the maximum gain achievable of 6dB. This figure is the maximum gain that can be expected by increasing the number of driven elements in an array by 4. This would result in the array having a gain of around 15 dBic. To achieve this gain, the apertures of each element must not overlap and ideally should just touch. Also all elements need to be fed in phase with equal power division.

The aperture or effective area of an antenna can be calculated from either the gain of the antenna or by measuring the beamwidth of the antenna. The assumed gain of 9dBi was used and this resulted in the minimum spacing of 0.82 wavelength. Using the measured H-

Plane Beamwidth of 70 degrees resulted in a minimum spacing of 0.84 wavelength. Therefore to achieve a 6 dB increase in gain over a single element, the minimum spacing should be a minimum of about 0.85 wavelengths. Mutual coupling is not a problem with patch elements at this spacing as the isolation is in the order of -30.0 db.

The next consideration was to design a power division system to provide equal power and phase to each element. As lead length is quite critical at 70 cm and the fact that the final array would be mounted on a single sheet of aluminium, I decided to use micro strip (or strip line) power division as this could be easily constructed on the underside of the ground plane. Micro strip is simply a flat conductor mounted

close to a ground plane. It is an unbalanced transmission line where the width of the strip and the spacing of the strip above the ground plane determine the characteristic impedance.

As the elements must be spaced more than 0.5 wavelength apart, quarter wave matching was going to be awkward. However if the elements were spaced 1 wavelength apart centre to centre, cascaded quarter wave transformers could be used or better still, 0.5 wavelength exponential tapered transformers (this arrangement has considerably wide bandwidth compared to a single quarter wave transformer).

So the final initial design was an array of 4 patches mounted in a square formation, with element spacing of 1 wavelength. The screen size was chosen to be 1200X1200 mm, a little larger than necessary, however as standard aluminium sheets are 1200X2400mm this was a convenient size. For rigidity and for mounting, the screen was reinforced with a frame 1200X1200 mm made of 25 mm square aluminium tube. A brace across the middle of the screen was decided on to ensure the aluminium sheet didn't wobble in the middle.

Six 0.5 wavelength exponential transformers are used as follows

Each pair of patches is connected using 2 transformers, transforming 50 ohm to 100 ohm. At the junction of the transformers is therefore 50 ohm (100 ohm in parallel with 100 ohm). The junctions are then connected with the transformers providing the same transformation again except an N type connector is connected at the junction for connection to the 50 ohm feed cable.

The strip line transformers used were designed using a program called "TXLINE" which is a free program available and calculates the

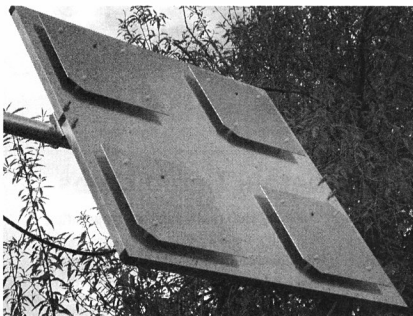


Photo 1

characteristic impedance of a number of different types of transmission line. I did have a fairly accurate formula to calculate the characteristic impedance of a strip line, however I used this as a check on the final dimensions. The program "TXLINE" is quite accurate and accounts for the thickness of the strip used and the "fringing" effect on the characteristic impedance.

Construction

As I was fairly optimistic about the success of this project, I decided to take a bit of time to plan and construct the array.

The first thing was to build the screen and frame. The screen was made of 2 mm thick 1200X1200 aluminium sheet pop riveted (Using stainless steel pop rivets) to the aluminium frame made of 25 mm square aluminium tube. Plastic right angle connectors were used to construct the frame. The brace used was also 25 mm square aluminium tube mounted across the middle of the front of the screen leaving the rear free to mount the strip line transformers. This was pop riveted from the rear. A bead of natural curing Silastic was also used as an adhesive and also a sealer.

The patches were made of 2.0 mm aluminium sheet. The mechanical mounting was identical to the prototype patch using nylon nuts and bolts at the corners and a stainless bolt to earth the centre. The patch height was made 12mm. Electrical connection was made using small countersunk brass bolts, which were inserted through a countersunk hole at the patch feed point, and bolted from the top of the patch. The

inner of the phasing cable was soldered on to the head of the bolt. The phasing cable used was RG58U as this was the best available at the time. As the phasing cables are quite short, loss is not a problem. However it would be preferable to use RG223 which is a much better quality cable as the characteristic impedance is much more accurate, which is desirable for a phasing cable.

The outer of the phasing cable was soldered to an "F" type female-to-female connector, which has the short end cut off, the inside removed, forming a sleeve, which the coax can be fed through. The modified "F" type connector can then be used as a feed through for the phasing cable, earthing the outer to the ground plane. A 3/8-inch hole is drilled through the ground plane to mount the modified "F" type connector. This arrangement allows a very short connection to the underside of the patch.

The feed connection to each patch also uses a modified "F" type connector as a sleeve. Using a piece of the centre conductor of Belden 9914 cable fed through the centre of the sleeve and air spaced forms a short coaxial line with an impedance very close to 50 ohm.

This is soldered to one of the brass bolts for connection to the patch. The other end is soldered to the end of the strip line transformer.

The strip line transformers are

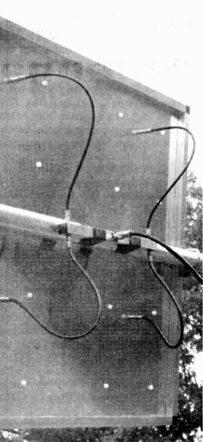


Photo 2

mounted a distance of 5.0 mm from the ground plane. Small 5.0 mm spacers made from polystyrene foam and glued to the strip line and ground plane using natural curing Silastic. The dielectric constant of polystyrene foam is almost 1 and it has very low loss.

Initially the first patch was tuned to be resonant at 436 MHz. Once the dimensions were established, the other 3 patches were cut to size.

A week later (after a couple of very late nights constructing) the array was complete.

Testing

After spending so much time on this project, I must admit I was a bit apprehensive about connecting the array to the IC471A via the Bird Wattmeter, as this would be the moment of truth. No problem, to my surprise the VSWR at 436 MHz was 1.2: 1 and no reflected power was measured at 440 MHz. The real test would be the AO40 uplink.

A couple of days later, with a

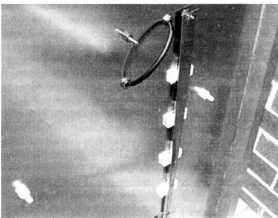


Photo 3

favourable pass of AO40 over Europe, I tried the array out at an elevation angle of around 20 degrees (with nowhere to mount the array, I could only rest the array propped up on a seat on the front veranda).

With about 25 watts output (18 watts at the antenna), transmitting CW resulted in a return carrier from AO40 which was about half an S point below the level of the beacon, a sensational result. Signal reports on sideband varied from 5X6 to 5X9. In a QSO with Dom, I8CVS in Italy, he complained that my signal was stronger than his and he was using quad 22 element yagis on the 1,296 MHz uplink!

Since then, I have had quite a few QSOs on AO40 with reports of an exceptionally strong uplink signal.

With the problem that AO40 had just before December 2001, which resulted in the satellite pointing in the wrong direction near and at apogee, I decided to build one single 2 metre patch antenna and mount this with the 70 cm array on the same boom, to try out FO20, FO29, UO14 and AO10. Excellent results with all these although there is very little activity on FO20 and FO29, and AO10

is very unpredictable because it has no spin stabilisation and it is usually pot luck if its antennas are pointing in the right direction (not to mention it must be in sunlight to work as the batteries went open circuit some years ago so all power is derived directly from the solar cells.)

Since the construction of the array I have done further extensive reading on patch antennas, and gained a much better appreciation of how they work and a reasonable understanding of the design process.

I am currently working on single feed, circular polarised patch design that should simplify the construction and make the construction of higher gain arrays more achievable. Initially I am designing a smaller, simpler 4-patch array, which should have the same performance as the prototype array, which can be more easily replicated.

Summary

After having done a reasonable amount of initial work with patch antennas, I would conclude that patch antenna arrays are one of the most versatile and exciting antenna systems I have studied.

Although the technology was developed more than 20 years ago, application has been mainly for commercial antenna systems in the microwave spectrum. I have not seen any development of these antennas for use in the UHF area (Except for the antennas on AO40) where I believe there is huge potential. Although I have not seen any reference to patch antennas in any of the well-known amateur radio handbooks, I believe this is one of the few technologies left that has not been fully explored and developed for use at UHF.

There are a significant number of features of these antenna systems which allow the realisation of an antenna system with a level of performance that is difficult to achieve using the more traditional technology of yagi and reflector arrays.

I plan to write another follow up article with a bit more technical detail than is included in this article. This will deal with further developments, a list of features and applications of these antennas that distinguish them from most other antenna systems and an update on the design of single feed, circular polarised patches.

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Technical Abstracts

Gil Sones VK3AUI
230 Moore Street, Box Hill South Vic 3128

LA8AK Loop Antenna for LF

In the LF column of Dave Pick G3YXM in *Radio and Communications* for September 2002 a loop antenna for LF was described by Jan-Martin Noeding LA8AK. This loop was a multiple turn design with a JFET amplifier.

The loop is shown in Fig 1. The amplifier uses a J310 FET biased to 20 mA for good intermodulation performance. The loop of 28 turns is a

square one with 1.5 metre sides with the turns separated by spreaders at the corners. The Q of the loop is about 50.

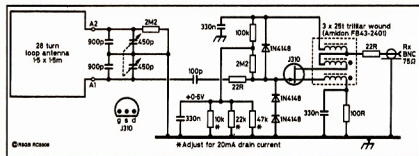


Fig 1. LA8AK Loop Antenna and Preamp.

VHF-UHF Low Loss Diplexer

A low loss VHF - UHF diplexer was described by Pavel Zanak OK1DNZ in *QEX* for Mar/Apr 2002. The diplexer was built into a small tinplate box and used semi rigid coaxial lines and four coils. The design was aligned with an HP 8714B vector network analyser.

The diplexer is shown in Fig 2. The coaxial cable line lengths are given in Table 1. The inductors L1 and L2 are 95 nH air core coils consisting of 5.5 turns of #20 AWG (0.8 mm) enamelled copper wire wound on a 3 mm diameter drill with the turns spaced 1 mm approx. The inductors L3 and L4 are 32 nH air core coils consisting of 2.5 turns of #20 AWG (0.8 mm) enamelled copper wire wound on a 4 mm drill with the turns spaced 2 mm approx. The connectors are N type. The box used was a tinned steel box 74x148x30 mm made out of 0.5 mm thick tinned steel plate. The coaxial lines were 50 ohm hand formable semi rigid cable Sucoform 141 Cu order number 22511635 from Huber and Suhner. Try: products.hubersuhner.com/index_rfcoaxcable.html.

The diplexer operates as follows:- For a UHF signal CC1 is a quarter wave open circuit stub which places a low impedance at UHF at the VHF port. CC1 appears at VHF as a capacitive reactance and is brought to parallel resonance by L1 at VHF. The low impedance at UHF of CC1 is transformed by CC2 to a high impedance at the junction with CC3, CC4 and L2. CC3 is a quarter wave UHF open circuit stub which places a low UHF impedance at the CC2, CC3, CC4 junction. L2 is resonated at VHF with CC3 so that VHF transmission is not impeded. CC4 is a quarter wave long at UHF and so presents a high impedance at UHF at the common port. The transmission at VHF between the VHF Port and the Common Port is not affected.

Continued on page 28

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Andy VK3IV

Continued from page 27

At UHF CC5 is a half wave open circuit stub and so presents a high impedance at UHF to L3. The other end of L3 is connected to the UHF port of the UHF path. L3 presents a high UHF impedance to the UHF path. At VHF L3 resonates with the capacitive VHF reactance presented by CC5 and the series resonance places a low VHF impedance at the UHF port. The low VHF impedance is transformed by CC6, a quarter wave VHF line, to a high VHF impedance at the junction with CC8 and L4. L4 is series resonated at VHF with CC7 which is another half wave open circuit stub. CC7 presents a high UHF impedance to L4. The other end of L4 is connected to the CC6, CC8 junction where it presents a high UHF impedance. UHF transmission is not affected. CC8 is a quarter wave length at VHF and so presents a high VHF impedance to the Common Port. The UHF path is not affected and passes signals between the UHF Port and the Common Port.

Tune up requires reasonable test equipment. A vector scalar network analyser covering 100 to 500 MHz is desirable.

A 50 ohm load is connected to the UHF port. The VHF port is driven with a swept signal and the common VHF/UHF port is connected to the analyser input. CC1 and CC3 are adjusted for maximum attenuation between 432 and 440 MHz. 70 dB should be possible. L1 and L2 are adjusted for minimum SWR at the VHF port between 144 to 146 MHz. This should be about 1.05:1.

Then connect the 50 ohm load to the VHF port and drive the UHF port with the swept signal. L3 and L4 are adjusted for maximum attenuation between 144 and 146 MHz. This should be about 70 dB. The SWR between 432 and 440 MHz should be about 1.26:1.

The cable used has a velocity factor of 0.7. The minimum bending radius is 11 mm. The cable lengths, taking velocity factor into account, on the outer conductor are given in Table 1. Inner live coaxial conductors are insulated by approx 2 mm of the PTFE dielectric. Live connections must be as short as possible. CC1 and CC2 should be initially a little bit longer (130 mm approx) to allow for trimming during adjustment on test. The outer shields must be directly connected to the N

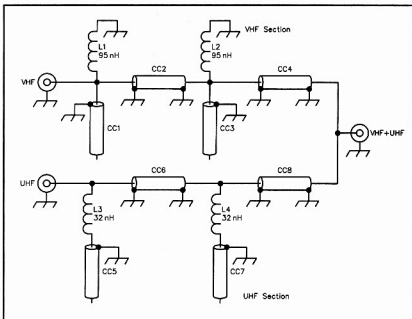


Fig 2. Diplexer Schematic Diagram.

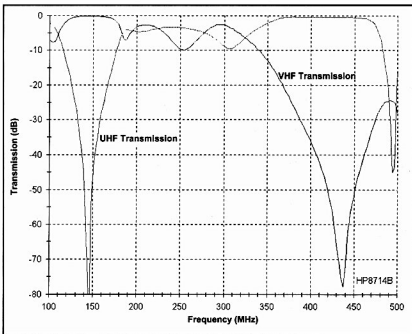


Fig 3. Transmission VHF and UHF Paths.

Table 1. Cable Lengths

Cable	Electrical Length	Physical Length mm
CC1,CC3	0.242wl UHF	113
CC2,CC4	0.250wl UHF	120
CC5,CC7	0.5wl UHF	241
CC6,CC8	0.25wl VHF	362

connector grounds. After cutting and stripping, the coaxial cable shields must have a circular edge. The coaxial cables are wound 22 mm diameter to fit into the box. Open ends should be kept clear of ground areas.

Results are shown in Figs 3, 4, and 5.

EMR implementation update

By Jim Linton VK3PC

The long anticipated Electromagnetic Radiation (EMR) limits for amateur stations could come into force as early as 1 March, 2003, depending on their progress through the government's legislative drafting process.

EMR human exposure limits for all apparatus licensed transmitters were previously due to begin on 1 July, 2002, however the Australian Communications Authority (ACA) delayed the process so it could formally adopt a new radiation exposure standard.

The ACA had based its EMR limits on the lapsed Australian and New Zealand Standard AS2772.1 - and the delay has enabled it to adopt the Australian Radiation Protection and Nuclear Safety Agency's new Radiation Protection Standard Maximum Exposure Levels to Radiofrequency Fields 3kHz to 300GHz.

The WIA, which has been working closely with the ACA on the implementation of the EMR limits, understands that in practice there is little difference between the two standards, at least as far as the Amateur Service is concerned.

A detailed article, "Will your station meet EMR requirements?" appeared in the June 2002 edition of Amateur Radio magazine, and can also be read at www.wiavic.org.au/emr

The average amateur station will easily comply. It is important for all radio amateurs to know the requirements and apply this knowledge in the operation of their stations as responsible users of the radio spectrum.

The ACA has advised the WIA that it is issuing draft Licence Condition Determinations (LCDs) for the Amateur Service for public consultation. Its timetable is to complete consultation late this month, and then issue the LCDs reflecting changes if any resulting from the consultation, on or shortly after 1 March. The timing may vary, depending on whether there are any drafting or other delays.

Once the LCDs are gazetted, all new amateur licences issued must comply with them, while existing licensees will have up to three months to achieve compliance.

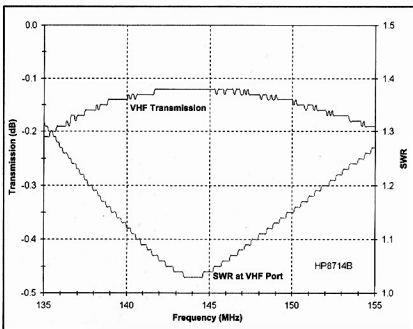


Fig 4. Transmission and SWR VHF Path.

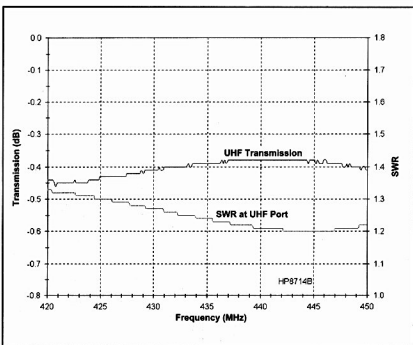


Fig 5. Transmission and SWR UHF Path.

PLAN AHEAD
Urunga Field Day
19, 20 April

VK1 News

Forward Bias

Peter Kloppenburg VK1CPK

January 2003 was a month we shall never forget. Fire destroyed the homes of two amateurs, Greg Black (VK1GW) and Jack White (VK1ZAD). The houses of two other amateurs, Ray Roche (VK1ZJR) and Deane Walkington (VK1DW), sustained fire/smoke damage, while some amateurs saw their next-door neighbour's home go up in flames.

The Division's repeater station; (VK1RBM) 438.525 MHz at Black Mountain went off the air due to burned coax cables to the antenna at the top of the collimation tower. There is at present no estimate of when the repeater will be back in service because Tidbinbilla tracking station has priority in replacing its own burned cables on the tower.

The Trash & Treasure sale on the nineteenth was partially successful. It was scheduled on that day because there was to be no general meeting that month and the committee felt that something had to be organised for the members. The firestorm on the day before ensured that

many amateurs stayed at home to watch the house and the weather for more of the same. There were to be five stalls, each with a variety of trash and treasures, but only one stall showed up - the Division's. The soft drinks that had been sitting in the fridge since Saturday morning were nicely warmed up because of the blackout, and couldn't be sold.

Because many Canberra amateurs have disposable equipment that needs a good home, there will be a Grab & Run stall(s) where everything is free to take, including those items that were not sold in January. The next T & T and G & R is



Canberra's hills alight

planned for some time mid-year and we hope that the weather is working with us then.

The next general meeting will be held on Monday, March 25, 2003 in the Scout Hall, Longerenong St., Farrer. Cheers.

VK7 News

"QRM"

Bushfires have been front page news lately and the Southern end of our island has had some beauties! The SES and Fire Services were totally stretched and our Southern branch WICEN members took over the communications work from the Bluff Road Control at the Claremont Fire Station. Four members, VK7HGO, Robert VK7RB, Will, VK7HIC and Clayton, VK7ZCR spent a total of 86 man-hours at the control during the peak fire periods with Robert also working at the helicopter base at the Claremont Oval. A letter from the Southern Region, Tasmania Fire Service congratulated our members on the professional standard of their work - the reliability took a lot of strain off the emergency services.

Our Southern branch had their annual meeting on Wednesday, 5th February and the incoming team is: -

Office Bearers for Southern Branch 2003

President	Justin Giles-Clarke VK7TW
Vice President	Open
Secretary	Dale Barnes VK7DG
Treasurer	Richard Rogers VK7RO
QSL Manager	John Bates VK7RT
Publicity officer	Rod Finlayson VK7TRF



On the same night the north-west branch at their annual meeting elected:

Office Bearers for Northern Branch 2003

President	Nil
Vice-president	Steve Jones VK7ZSJ
Secretary	Ron Churcher VK7RN
Treasurer	John Webster VK7KDR
QSL Manager	Ken Hancock VK7KH

Divisional Councillors

Ron Churcher VK7RN,
Steve Jones VK7ZSJ

WICEN members Gavin VK7HGO (left) and Robert VK7RB (whiskers) at the Bluff Road Control, Claremont fire station doing the communications for the big fire in Bagdad area near Hobart last week.

VK6 News

Welcome to my first submission for 2003. This year has begun with many newsworthy stories, but lets confine ourselves to amateur radio shall we?

Bushfires in VK 1, 2, 3, 6 and 7

Special thanks must be extended to all operators that helped with communications throughout the disasters. VK6 was not immune to these outbreaks of fire and the community has suffered great losses in Gin Gin, Bakers Hill and the Northern and Southern suburbs of Perth. Although not of the magnitude of fires experienced over East, the loss of one property is one too many.

Amateur of the Year

Clive Wallis, VK6CSW, was voted Amateur of the Year in VK6, 2002. Clive has been involved in radio since before I was born. Every Sunday and Wednesday he can be found on the air, like a beacon on 2 metres, conducting a net for the Repeater Group and Hills

Amateur Radio Club. Clive has helped me personally and no doubt many others in the pursuit of the AR hobby. He welcomes people unknown to himself into his QTH. Most people wouldn't open the door to a stranger these days. Clive has performed many technical jobs to ensure the amateur radio operators of VK6 have enjoyed communications throughout the State.

VK6 Website

I have trolled through the Website today learning a lot. Many websites, when first created, contain information that can date quickly. While the Internet is an almost instant form of communications it is disappointing to log on to a site and find the information it contains to be several months old. Our webmaster Christine VK6ZLZ, appears to work constantly to ensure that this does not happen. The addition of a digital camera has allowed social functions to be seen and enjoyed by a vast audience.

Echolink Storms Ahead

Echolink is an internet based system that allows only licensed amateur operators to converse with each other via repeaters or in computer based conferences. This program has nearly 100,000 hams registered worldwide and numbers are increasing at roughly 4000 per week. Some operators, who have been unable to get on the air because of antenna restrictions, are rekindling past friendships with this system.

Unfortunately there is a trap. Some Internet service providers allow unlimited hours to connect, but impose a download limit per month. Read the fine print! While one is using Echolink a huge amount of data is flowing back and forth and you may be billed for it. I am sadly speaking from experience.

That's all for this month.

73 from Chris Thomson
vk6notes@wia.org.au

VK3 Notes

By Jim Linton VK3PC

WIA Victoria web site: www.wiavic.org.au
email: wiavic@wiavic.org.au

Notable radio amateurs pass away

The deaths have occurred of two VK3 radio amateurs who, in very different ways and at different times, made enormous contributions to our hobby.

WIA Life Member, Amateur Radio magazine editor, past WIA Victoria and WIA Federal President, Bill Gronow VK3WG was an important link with the pre-WWII and immediate past war period.

Les Jenkins VK3ZBJ, a high achiever in many facets of VHF/UHF/SHF operation, holder of nine distance records, a key member of the WIA Project Australis, and exponent of amateur television.

Obituaries on both have been prepared for AR magazine. WIA Victoria expresses its sadness at their loss, but also acknowledges the legacies they have left for future generations of radio amateurs.

Victorian Government 70cm radio network

As reported previously the lower end of the 70cm band 420-430 MHz is set to be used by government radio networks in Victoria and New South Wales, and is already withdrawn from the Amateur Service in the Perth area.

The Victorian Government is developing a new mobile radio network - the Metropolitan Mobile Radio (MMR) project - intended mainly to provide communications for its essential and emergency services.

Discussions are now being held involving the Australian Communications Authority, representatives of the Victorian Government radio system, the WIA and others.

The timing of spectrum access to support the MMR project is unknown as this stage, but the indications are that it will initially cover the main population area of Victoria and ultimately extend across the whole state.

Bushfires - radio amateurs in action

An enormous effort was made by WICEN (Vic) and members of the Red Cross Emergency Communications (RECOM) during the bushfire emergency in northeast Victoria and Gippsland.

WICEN (Vic) volunteers had a primary role of operating the trunk radio system for the Department of Environment and Sustainability (DSE), both at Incident Control Centres and five airwing bases.

RECOM, a service arm of the Australian Red Cross, provided data communications from field stations throughout the fire-affected area, using leading edge amateur radio data communication technology and amateur radio frequencies.

The Victoria Police, DSE and the Australian Red Cross have been quick to recognise the selfless contributions made by radio amateurs during the fire emergency.

continues next page

Club News

Adelaide Hills Amateur Radio Society

The January meeting was a very enjoyable barbecue at the QTH of Hans VK5YX and Leslie. No one got lost. The weather was perfect up in the Adelaide Hills after a rather torrid day. The company was good and the films were funny.

The AGM is in February and a members' Buy and Sell in March but after that things will be back to normal with a meeting on the Third Thursday of the month to which everyone is invited. Contact Geoff VK5TY for details if you are in Adelaide on that Thursday at any time.

ar

Your club news
ought to be here!



John VK5EMI, Graham VK5JGM and Linden VK5SWR. All having fun.



George VK5ALS, John VK5JD and
Jennifer VK5ANW

VK3 News

continued

WIA Victoria monitored the activity through the frequent briefings it received, worked closely with both WICEN (Vic) and RECOM, and provided assistance where needed.

It shares with both groups in acknowledging the excellent co-operation and assistance during the emergency that was provided by the Australian Communications Authority, Regional Office Melbourne.

New repeater on air

A two-metre repeater serving the Wimmera district of Victoria, VK3RWM is now on air and reports from members of the Horsham Radio Club confirm it has very good coverage.

The WIA Victoria repeater is located at Mt Arapiles, some 33 km southwest of Horsham and near the town of Natimuk. Please note its frequency is 146.850 MHz, which does not appear in recent repeater listings.

Its area of coverage is basically from Nhili to Ararat and the west side of The Grampians.

ar

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<http://www.wia.org.au/vk6>

Roy VK6XV on 08-9246-3642 or Christine VK6ZLZ on 08-9351-8873

Email: vk6@wia.org.au or vk6membership@wia.org.au

Post to WIA WA PO Box 10 West Perth WA 6872

InstantTrack problems ...don't forget the FAQ!

Well do I remember loading my first copy of IT onto the old XT computer. It was a program to be reckoned with in those days and it can still hold its own today against many of the newer graphic trackers.

It offers simplicity and accuracy and the latest versions sport automatic keep updating and an array of goodies that

would have made us rather envious in the old days. Every now and then questions come up on the AMSAT bulletin board and some are curly ones. Most however can be sorted out by reference to the InstantTrack FAQ which is available at the following web site: <http://www.amsat.org/amsat/intro/itfaq.html#036>

A lot of work has gone into the FAQ and the IT we have today is the culmination of many hundreds of hours of voluntary work by a team of developers and beta testers around the globe. So if you get into trouble with IT or format your hard drive and lose the configuration, first step read the help file, then consult the FAQ.

Saudisat-1C switched on over VK-ZL

Many reports are to hand from overseas amateurs regarding the operation of Saudisat-1C.

Reports have been excellent with high receive sensitivity and strong stable signals being reported by nearly all operators. Unfortunately the satellite was not turned on for some time in this region.

Inquiries were made and permission was granted to establish some control

stations hereabouts and since that time the satellite has seen lots of activity in VK-ZL. For the moment the switch-on technique is being restricted to a few stations until the effect of increased activity on the power budget, as a whole is better understood.

SaudiSat-1C carries onboard a mode J repeater with an uplink frequency of 145.850 MHz and a downlink frequency

of 436.800 MHz. Once it has been activated by a control station in your area you need to transmit a 67Hz tone to make it work. It then operates like any of the previous FM satellites. The downlink transmitter runs 250 mW so you will need a tracking antenna system to do well on this one. The antennas are 1/4 waves mounted on opposite sides of the spacecraft.

continues over

Cable and Connectors



- | | |
|--|--------------------|
| ● RG58C/U Belden 8259 | @ \$0.90 per metre |
| ● RG213/U Belden 8267 | @ \$4.45 per metre |
| ● RG8/U Belden 9913 Low Loss | @ \$5.15 per metre |
| ● RG8/U Belden 9913F7 High Flex Low Loss | @ \$5.55 per metre |
| ● RG8/U - RF400 Belden 7810 Low Loss Sweep Tested to 6000MHz | @ \$6.30 per metre |



- | | |
|--------------------------------------|----------------|
| ● RG58: B80-006 UHF connector (M) | @ \$7.65 each |
| ● RG8/213: B80-001 UHF connector (M) | @ \$8.80 each |
| ● RG213: B30-001 N connector (M) | @ \$9.10 each |
| ● RG8: B30-041 N connector (M) | @ \$14.00 each |

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W2ETI Moonbounce signal as an antenna test for L-band gear

Some time ago I wrote an account of this service and since that time I have listened on one or two occasions. So far I have been unable to hear the W2ETI signal and of course I put it down to sheer cussedness.

Since then a couple of well meaning folk have engaged their brain and put pencil to paper and come up with some numbers. You can do this yourself to see whether you are within coo-ee of hearing the signal or not.

You can download an eme-link

calculator from the seti league web site (www.setileague.org) and it will enable you to calculate the likelihood of your hearing the beacon. As an example, if you are using a 2 metre diameter dish and a 0.4 dB NF preamp (this is a good figure to aim at using modern devices) you should expect around a -15 dB signal to noise ratio. Now this is a bit of a worry, but – if you can press one of the new DSP software packages into service and select a long integration time, you may just detect something.

As a visit to the above site will show, the setup at W2ETI does not run high power, nor does it have a super antenna system. It is in fact purposely kept at a relatively low level to act as a stable calibration signal for radio astronomy systems.

Even though your OSCAR class station may have difficulty hearing W2ETI you may well be able to hear some of the regular amateur EME stations a lot better. The advantage of W2ETI is that it is on-air permanently.

PCsat returns to service ...but get in while the going's good

As predicted this satellite is periodically entering eclipse. When it returns to full sunlight it is capable of supporting full service.

As Bob Bruninga says, "PCsat has amazed us, because with the loss of 16% of its solar arrays on launch, it runs into a negative power budget most of the

time, and so it has been deep-cycling its Nicads to near zero volts every orbit, 14 times a day, for over 5000 cycles. Yet when it is in the sun, it comes back to life.

This will cease as soon as one of the cells shorts or reverses, so use her while you can, she won't last long".

AO-40 proving popular as more people tool-up for L-band, S-band and higher

Australia is becoming quite well represented on AO-40 with more and more stations firing up their S-mode gear.

DX country, zone and grid-square collecting is becoming well established and as activity increases, many of the 'old reliables' like ZRO tests and Straight Key Nights are returning as in the days of AO-10 and AO-13. At peak times the transponder passband sounds like 20 metres.

Most operators are coming to terms with "LEILA" the gadget that does much to prevent overloading the satellite's AGC system by stations running too much power. It's been very interesting to see how at first the comments about LEILA were mostly negative but of late almost everyone has changed attitude and taken steps to not trigger the dreaded

"hooter". It's been a slow process of education to get operators to concentrate on their receive setup rather than just blow harder if they can't hear themselves on the downlink.

The main cause for concern at present is people who still can't hear themselves very well tuning up on the beacon frequencies. This can have a very bad effect on control stations' ability to capture vital telemetry at crucial times. A lot of effort is being expended to educate operators away from this practice.

Recently many reports are coming in of successful K-band operations. Quite a number of contacts have been reported. I'll try to get together some details of a typical K-band receive chain for next month's column.

AMSAT-VK Change of Mailing Address

Members and other interested parties are advised that if you wish to contact AMSAT-VK by mail, the post box is no longer valid. The new address appears in the header box above.

The AMSAT group in Australia

The National Co-ordinator of AMSAT-VK is Graham Ratcliff VK5AGR. No formal application is necessary for membership and no membership fees apply. Graham maintains an email mailing list for breaking news and such things as software releases. Members use the AMSAT-Australia HF net as a forum.

AMSAT-Australia HF net

The net meets formally on the second Sunday evening of the month. In winter (end of March until the end of October) the net meets on 3.685 MHz at 1000 UTC with early check-ins at 0945 UTC. In summer (end of October until end of March) the net meets on 7.068 MHz at 0900 UTC with early check-ins at 0845 UTC. All communication regarding AMSAT-Australia matters can be addressed to:

AMSAT-VK,
9 Homer Rd,
Clarence Park, SA. 5034
Graham's email address is:
vk5agr@amsat.org

More evidence of trend from shortwave to Internet

It has now been confirmed that the German external service, **Deutsche Welle**, (DW) is going to discontinue English broadcasts to both Australasia and North America from the 30th of March.

Their last English broadcast will be at 2100 March 29th on 9765 and 15275. German language programming will continue as will English programs to Africa and Asia.

Ironically DW announced that they are expanding their English language news broadcasts, presumably geared for rebroadcasts over domestic stations on AM or FM. I believe that the ABC PNN network does indeed relay DW along with Radio Netherlands, Radio Canada International and the BBC World Service.

Naturally this decision has angered many, yet it reflects an increasing trend away from shortwave broadcasting in favour of Internet streaming.

The BBC World Service was caught when one of its American Internet providers closed down after the Copyright fiasco emerged within the US. It had to develop its own webcasting presence along with its domestic analogue and digital networks.

DW may have abandoned English broadcasts to this area but it is going to be one of the first stations to broadcast in the DRM format from June of this year.

Initially broadcasts will be beamed to Asia along with the conventional AM format. It is unclear how quickly commercial quantities of DRM receivers will be available in the marketplace. Trial DRM software is available via the Net at \$160 USD. This is somewhat expensive. Most HF broadcasters now specify that new or replacement transmitting equipment orders must be DRM compatible.

As previously mentioned here, all existing digital radio platforms are incompatible. The Americans have IBOC, which is already operational despite no IBOC receivers being

available until the middle of this year. DAB, also known as Eureka 147 is operational, in Germany and the UK. Receivers are still very costly and in short supply, particularly in the UK. I believe that currently there are approximately 100,000 sets and the average price is 99 pounds sterling. There are 5 digital networks over the BBC with only a few commercial stations operating.

In Germany, several broadcasters have abandoned DAB because of budgetary constraints and few receivers. Experimental broadcasts in Eureka 147 have taken place in Canada and Australia. DAB and IBOC are not really designed for HF broadcasting.

Changes are also afoot at the VOA and Radio Liberty. Both organisations come under the umbrella of the US Government's International Broadcasting Bureau. Several Eastern European languages have been axed or reduced, with more funding for broadcasting to the Middle East and Indonesia. Two clandestine stations under the IBB, *Radio Sawa* and *Radio Farda* have taken the major portion of the increased output. They are targeting the Arabic and Persian speaking populations. Significantly Indonesian broadcasts have also increased from the VOA.

I suppose you also have noticed that there has been a major increase in Arabic broadcasts with the Iraqi crisis

continuing unabated. Israel also conducted test broadcasts to Australia and Asia recently in our local evening hours on a variety of non-standard channels in the 16 and 19 metre bands. This was at the time of the recent Israeli general elections.

The new Kununurra (WA) sender of HCJB Australia has continued to experience propagational difficulties, especially with their broadcasts to the South Pacific on 11755. Their 0700 sign-on has consistently failed to make it to the target area until after 0800. Another European station was also co-channel.

When HCJB from Quito was operating on this channel, signals were extremely strong. HCJB-Australia therefore shifted to 11770 for their South Pacific release. Although the channel is now clearer, propagation is still identical until the darkness path sets in.

Broadcasts to South Asia have been quite good on 15480. This is from 1200. I also suspect that they are using the full 100 kW unlike 11770, which has been using power as low as 13 kW.

March 30th is the date chosen for HF stations to alter their operating frequencies and hours to accommodate the introduction of Summer Time within the Northern Hemisphere. These changes commence as from 0100.

Well that is all for this month. Please send your comments or news to me at vk7rh@wia.org.au.

73

PLAN AHEAD

**Harry Angel Memorial
Sprint**
Friday 25 April, 2003



Ham Shack Computers

Part 23 – EchoLink

Alan Gibbs, VK6PG

223 Crimea Street, NORANDA WA 6062

Email: vk6pg@tpg.com.au

In recent years, the progress made in computer hardware and software development has been quite remarkable. Many enterprising Amateur Radio (RA's) enthusiasts have written superbly conceived applications for Microsoft Windows and Linux operating systems. Whilst some of these applications have not been the best, others have been outstanding in terms of their ease of installation, operational stability, and productivity.

Just trying to keep up with the world of computing these days seems well nigh impossible. However, the Internet shines with a myriad of activities that will benefit most active RA's in their quest for increased enjoyment. The task of chatting to other RA's via the Internet live, and the ability to connect Amateur Radio equipment to your Ham Shack Computer through IRLP have been foremost in recent times.

One of the finest achievements in this field has been the development of EchoLink software which allows RA's to chat with others worldwide, in real time, person-to person, via a linked VHF/UHF system, or through a repeater. Well over 70,000 RA's are now "connected" using EchoLink without being subject to the demeaning rubbish and endless pornography (and subsequent virus attacks) found on IRC, ICQ, Yahoo, HotMail, Messenger and other communications platforms.

What is EchoLink?

EchoLink under Windows allows RA's to connect with others worldwide. Connections can be made one-to-one, via a linked transceiver at one end, or either end of the connection. Other ways include connecting to a remote VHF/UHF repeater, or any of the above combinations in a conference. Voice communication is done with a microphone connected to the sound card, and the computer speakers provide the return audio. The keyboard space bar acts as the push-to-talk (PTT) between 'overs', or if you feel lazy then voice operated (VOX) can be selected!

EchoLink is free to legitimate RA's who must first register your request for an active connection via EchoLink. For first time users, you might have to wait several days before permission is granted. The writer believes that the administrators of EchoLink check your validity from QRZ.com to avoid non-licensed intruders into the system. Once done you can 'login' to EchoLink and see a directory of other RA, links and repeaters who are currently connected to the worldwide system. To call and 'work' a station - just 'click' on the callsign and the connection is made in just a few seconds!

EchoLink - VK6PG

File Edit Station Tools View Help

995 stations on oceans.echolink.org (20% are busy)

Station	Stat	Time	Location	Node
F8PMJ	On	15:29	In QSO (2)(1)	50925
F9WT	Busy	15:25	France	51500
F8BEC	On	15:24	Savene France	54408
F6CLQ	Busy	15:25	Chatelet conso	53356
F6DHD	Busy	15:23	Savene (67) back soon	52008
G0FYN	On	14:26	Abingham - cheshire.uk	47562
G0SQZ	On	14:27	Sheffield, UK	40953
G1QAM	On	14:23	Luton UK	2864
G3OZC	On	14:25	>> Blackburn NW, UK <<	15475
G4JSB	On	14:25	Waiting for ablet	24579
G8GXP	On	14:25	ID39TG www.ofsof.com	51391

Stations On/Off

22 24 44 K1QX off
22 24 44 J43JML off
22 24 44 G4VGLN off
22 24 44 G4RCR on
22 24 44 K7AC off

Stations Busy/Free

22 23 25 K44T2U free
22 23 25 K44T2U free
22 23 25 N7F4Q2 busy
22 23 25 N7TV busy
22 23 25 ON1GL busy

Connected to: G3OZC JACK
United Kingdom
Host: pc1-blac1-cust104.mant.cable.nfl.com

Ready

G3OZC: hello alan VK6PG - Fine Jack. G3OZC ok.

Send

The EchoLink Screen

Displayed above, the EchoLink Screen shows the 'look and feel' of EchoLink. In the example, VK6PG is connected to G3OZC in the UK, and the status is in the receive mode shown by the RX suffix in the lower box on the right. Return sound levels are indicated on the horizontal VU meter.

When 'transmitting' or sending audio from the microphone, a similar display indicates the outgoing sound level. The Windows audio properties can be set for best level and sound quality. Other windows display station information, stations on/off and busy/free and so on. The white window in the bottom RH corner is used to type in text to be sent

whilst the other station is talking to you. A good example being to accurately type in and send your e-mail address to assist the operator at the far end. Imagine chatting - no QRM, QRN and no TVI at 5&9 both ways!

EchoLink Installation

This process could not be easier. Simply download the EchoLink latest release (2) from the Internet, and save to a temporary folder. Disconnect from 'the net' and move to the file and 'click' to execute. The default - C:/Program Files/EchoLink folder should be chosen. Follow the screen prompts until the software is installed. Reboot the computer and you'll see a new EchoLink icon on the desktop. 'Click' to open and look for the Tools > Setup > Preferences options on the top of the screen.

Work carefully and steadily through all the options until done. Connect to 'the net' and open EchoLink - look for the 'connecting' information displayed at the top of the Command Screen. It should be in the form of an IP address depending upon which EchoLink server is being called. Once connected - Fetching Data... will be seen followed by a successful connect.

Once a successful connection is established, an extensive list of stations, links and repeaters will be seen in the EchoLink Window. Some stations are marked as 'busy' and others may be 'on'. Use the Find options to look for specific callsigns of friends or favourite

repeaters, and 'click' the callsign to connect.

Work steadily through all the options on the tabbed dialog menus - My Station, Servers, Timing and Audio. Most users will choose the 'Single User' option. This means you will have access to all the facilities of EchoLink - without any AR equipment connected to form a link or repeater. Ambitious operators might ultimately change to connecting their local club repeater or personal gear from home thereby adding to the diversity within the EchoLink community.

Setting Up a Link

Access to the sound card line input and audio output from a VHF transceiver is all you need. More complex and secure installations may include CTCSS and PTT access making a very professional job. All the required information can be found in the EchoLink Help Menu.

In Operation

Having set up a new EchoLink installation, wait for several days (trying to connect each day) until you see a proper connection. Look through the list of stations for your own callsign. Notice that you've been issued with a NODE number which is unique to yourself. From now on this number will be listed every time another connection is made.

Try connecting to yourself first, and set up the audio input and output levels on the EchoLink VU meters. Disconnect, and choose a free station for a chat to

list of other stations connected to the same repeater is displayed in the right hand window. This gives you an indication of who's about, and a polite invitation for someone to call you. Add your own personal and station information by selecting Tools > Preferences > Connections and Station Information File (info.txt) and 'click' Choose. Edit the file and exit to save the information for others to see. Connect to yourself again to check the new data is displayed on your own screen.

Summary

EchoLink just has to be the 'most wanted' package of the moment - all thanks to its writer Jonathan Taylor, K1RFD. RA's with little in the way of antennas, seniors living in restricted accommodation, or those on a limited budget can enjoy the advantages of AR via EchoLink. This article shows just how easy it is to get the system going - even for those with limited computer skills. Operators with broadband continuous Internet access may well elect to connect their shack equipment for the benefit of others - a very commendable contribution to the AR movement.

Some readers will argue that this is NOT 'Amateur Radio'. However, the enormous improvements being made in the on-line digital fields must now be accepted as part of our hobby. It's better to embrace any new technologies that add value to our hobby and give pleasure to others worldwide. Why don't you try EchoLink? The whole project takes less than 15 minutes to fully install, and it's FREE so you'll have lost nothing yet gained new friends to compare AR notes when the HF bands are closed to your favourite DX locations.

Ham Tip No. 23 - When EchoLink is on-line, check your e-mail, surf the Net and write an article for this publication all at once. If your friend pops up on EchoLink, the alarm sounds and you can chat all at the same time!

Ham Shack Computers, Part 24 next month - deals with 'Computer Security' from vendors, unsolicited ads, hackers, nerds, spam, unwanted e-mail and viruses.

(1) Ham Shack Computers Web:

www2.tpg.com.au/users/vk6pg

(2) EchoLink software:

www.echolink.org

73s de Alan, VK6PG (Node: 53831)

System Setup

My Station | Servers | Timing | Audio

Mode

☒ Single User

☐ Sysop

Callsign: VK6PG

Change Callsign

Password: [REDACTED] ?

Name: Alan Gibbs

Location: Perth - West Australia

Email Addr: vk6pg@tpg.com.au

OK

Cancel

Help

determine that all is well. Friends, links and repeaters of special interest can be 'alarmed' so when they appear on the list, you'll be reminded. Ideal at sked times, band openings, and special interest AR activities.

One very nice feature being that sometimes connecting to a conference or repeater, a

Beyond Our Shores

David A. Pilley VK2AYD
davidpil@midcoast.co.au

Contesting on the rise

The ARRL reports a record number of total entries for ARRL sponsored operating events during the year 2002. Their Contest Committee reports a total of 18,817 logs were received, (up 1.7% on 2001). This would have been far greater had the World Radiosport Team Championship (WRTC-2002) not been held in Finland in July as several hundred of the world's top contest operators were at the convention and not operating from their home stations.

(ARRL N/L Vol2 03)

35 years up for Maritime mobile service network

The Maritime Mobile Service Network (MMSN) marked its 35th anniversary on January 3.

The net now operates on 14.300 MHz. According to Bobby Graves, KB5HAV, the net's original purpose was to assist those serving in the US military during the Vietnam War. In its early years, the MMSN saw a lot of phone patch traffic.

"Our primary purpose now is that of handling legal third-party traffic from maritime mobiles, both pleasure and commercial, and overseas deployed military personnel," said Graves, the net's schedule coordinator and Webmaster.

The net also helps missionaries in foreign countries. The MMSN has grown from its original nine founding members to nearly 60 net control stations and relief operators. It is recognized by the US Coast Guard and has been instrumental in handling hundreds of incidents involving vessels in distress.

During severe weather, the net also acts as a weather beacon for ships and relays warnings and bulletins from the National Weather Service and National Hurricane Center. "The Maritime Mobile Service Network has a legacy of serving people and will continue to do so," Graves said.

(AARL N/L Vol22 02)

High speed multimedia hamming

High-speed multimedia hamming via the "Hinternet" (Ham + Internet) could

be the next big thing for Amateur Radio. That's the hope of the ARRL High Speed Multimedia (HSMM) Working Group, which is adapting the highly popular IEEE 802.11b Part 15 wireless Internet protocol to Part 97 amateur operating.

"We expect it to be nothing less than revolutionary!" says John Champa, K8OCL, who chairs the ARRL HSMM Working Group—a subset of the League's Technology Task Force. Champa's team is calling the specific techniques, software and hardware involved "the ARRL 802.11b protocol" to distinguish it from the unlicensed, commercial protocol. Systems employ direct-sequence spread spectrum techniques and operate in the 2.4 GHz range. "Hinternet", Champa says, is a user-friendly way to refer to the development of high-speed Radio Local Area Networks (RLANs) capable of simultaneously carrying audio, video and data signals.

The Working Group's new "High-Speed Digital Networks and Multimedia" page <<http://www.arrl.org/hsmm/>> recently premiered on the ARRL Web site. Visitors to the site are very welcome.

(ARRL N/L Vol2 03)

Hams help out during telephone emergency

Hams responded to fill a communication gap December 23 after the aptly-named town of Broken Arrow, Oklahoma, USA, experienced a city-wide telephone outage that left telephone customers unable to call outside their local exchange.

Broken Arrow implemented its Telecommunications Failure Plan as a result. A request went out for amateurs to assist at the local emergency operations center (EOC) and at three area hospitals.

Several hams in and around the town of 75,000 residents responded to the call. Four Broken Arrow Amateur Radio Club members staffed positions at the Broken Arrow EOC and at three hospital emergency rooms.

The city officials were again very

impressed and appreciative with the amateur community's commitment to service and response to the emergency. It is times like these that such partnerships between local government and the local hams become invaluable.

The operation lasted about five hours. In addition to passing traffic between the EOC and the hospitals, lines of communication were opened with the Oklahoma State Department of Civil Emergency Management in Oklahoma City via the EOC's HF amateur station.

The telephone system troubles were traced to the loss of a digital protocol needed for call routing.

North Korea asks P5/4I4FN to QRT

The only Amateur Radio station active from North Korea has been ordered off the air.

Ed Giorgadze, 4L4FN, had been operating for a year as P5/4L4FN from Pyongyang. The ARRL subsequently accredited SSB and RTTY operation of P5/4L4FN for DXCC. QSL Manager Bruce Paige, KK5DO, said that on Friday, November 22, Giorgadze was called into a meeting with the "Radio Regulation Board" without any explanation, and he was politely asked to quit all transmissions and pack all his radio equipment. "He spent all day on the roof disassembling his antennas and packing boxes." Paige said North Korean government officials later came and sealed the boxes. When Giorgadze leaves North Korea on December 10 for two weeks vacation, "he is to take everything out of the country," Paige indicated.

Giorgadze had tried for more than two years to obtain permission to operate Amateur Radio in North Korea and finally was given the okay in 2001 to bring an ICOM IC-706MKIIG into the country.

In the intervening months, he's been slowly upgrading his antenna system. He's made more than 16,000 contacts during his stint in North Korea, and earlier this year attained the first DXCC ever from that country.

(ARRL N/L)

"Logbook Of The World" Limited testing a hit

The long-anticipated "Logbook of the World" (LoTW)—the ARRL's secure electronic contact confirmation system—took a major leap toward public release in January with several weeks of limited—or "alpha"—testing.

Dozens of Amateur Radio operators checked out a preliminary version of the LoTW software, which is still under development. Once ready, LoTW will enable participants to qualify for awards such as DXCC or WAS without having to first collect hard-copy QSL cards.

ARRL hopes that logging software vendors will choose to add value to their products by integrating LoTW client-side functions. "But the software we provide to individual amateurs will be sufficient for basic use of LoTW," he added. ARRL will not be releasing the LoTW server code, however.

Linked via e-mail, the LoTW testers spent two weeks registering their call signs, uploading logs and attempting to push the system to extremes. One tester was amazed at its robust nature after he uploaded a complete station log of about 320,000 QSOs. "I sent this blob expecting it to croak the server, but it didn't!" he said.

LoTW won't spell the end of QSL cards. Instead it will provide an avenue for increased speed and accuracy for hams chasing awards, as well as remove some chances for human error that can occur in the traditional process.

"This is really a system to offer credits for awards," said Mills, ARRL's Membership Services manager. Mills said LoTW will minimize opportunities to "game the system" or otherwise cheat—something that's not always possible to detect even with paper QSLs. He emphasized that the League has no plans to do away with accepting traditional QSL cards as it's been doing all along. "We're not replacing the whole paper QSL scheme with LoTW" he said.

Unlike electronic QSLing systems now in use, LoTW is not set up to exchange QSL "cards" via the Internet. The main idea is that ARRL will maintain a secure log database that will

be constantly updated by DXers, contesters, DXpeditions and thousands of amateurs. Registering and uploading electronic logs is free; the user will incur a charge when applying accumulated contact credits toward an award.

LoTW beta testing for the general Amateur Radio public is expected to begin soon. The ARRL has not announced an inauguration date for Logbook of the World.

(ARRL N/L 24Jan)

40 metre band

Did you know that the 40-metre amateur band is on the agenda for the World Radio Conference WRC-03 being held by the International Telecommunication Union (ITU) in the year 2003? The International Amateur Radio Union (IARU), of which the WIA is a member society, has the objective of a 300 kHz-wide world-wide band exclusive for radio amateurs in the vicinity of 7 MHz. Extensive preparations are underway. You can read about this work at: <http://www.iaru.org/7-MHz-Spectrum.pdf> - a 26-page booklet in colour, a 600 kB pdf file.

ZS to USA QRP Record

Over the last 5 months, an extremely low power beacon transmitter has been operating from the QTH of ZS1J at Plettenberg Bay, South Africa. The measured power output of the 7029 kHz transmission is 100 micro-watts and reception reports from all over South Africa, up to 1100 kilometres have been received by the beacon operator, Roger Davis.

In late January, on one of their early morning daily skeds, Bill, WA8LXJ, was asked by John, ZS2J, to see if he could receive this beacon as Bill has an extremely efficient antenna system and is consistently heard in South Africa on 40 metres at 20 dB over S9. Bill requested an accurate frequency readout of the transmission which was given to him as 7029.0155 kHz. The reason for the request was due to Bill having the

facility to narrow his receiver bandwidth down to an incredible 10 Hz. to be able to pluck out even the weakest signal from the noise.

On Tuesday the 29th of January, Bill, WA8LXJ, made a positive identification of the beacon's call sign and gave it a Readability 2, Signal strength 1 and tone T9. Craig also made a tape recording of the signal received and played it back to amazed South African amateurs on the daily, split frequency net, held on 7095 and 7177 on the morning of the 29th January.

Visit the ZS1J beacon web site at zs1j@qsl.net

And a note about the previous BOS item—

QRPPp ZS USA Path Feb 1 2003

Doing some mathematics on the QRPP contact from South Africa to the USA, using only 0.0001 of a watt on 40 metres, I have come up with the following rough calculations which confirm it is possible under certain conditions.

Firstly, we must assume reciprocal path conditions prevail at the time. USA to ZS and ZS to USA

Secondly, we must assume that each "S" point represents 5 dB on the receiver. (Is there a standard accepted by all manufacturers, it used to be 6 dB)

Bill, WA8LXJ's kilowatt output is received in South Africa at 20 dB over S9. This represents 9 "S" points at 5dB each, plus the 20 dB over S9, which equals 65 dB above the receiver AGC action.

Should Bill reduce his power to 0.0001 of a watt, it would represent a 70 dB drop in power. This would mean that his signal is now 5 dB below receiver AGC action.

By narrowing the receiver passband from 2.5 kHz to 10 Hz, would give a gain of 12 dB above noise on the signal. This would mean that the received signal would now be 7 dB above the receiver AGC start level and could possibly show an S meter reading of just above S 1, the exact report given by Bill on the tests.

Roger ZS1

ar

ALARA

Christine Taylor VK5CTY

vk5cty@vk5cty or geencee@picknowl.com.au

The Terrible Bushfires

Congratulations and thanks to all those amateurs who have helped out in the fight against some of the worst bushfires the country has suffered.

Without knowing who everyone is, we know there are many amateurs using their skills to help combat the fires. We are proud to have a skill that can be used in an emergency.

Thank Goodness the worst of it is over at the time of writing.

Nothing new under the sun? Absolutely!

She calls herself C, he calls himself N (that is if he is a man!) they 'talk' to each other every day and fall in love though they never meet.

Does that sound familiar? Do you 'talk' to someone you have never met, every day? Could you fall in love at long distance? You surely discover many, many interests in common and have lots of news to share each day.

No, this is not a story of internet chat rooms or email, it is the basis of a novel written over a century ago, called "Wired". It was subtitled "A romance of dots and dashes". The heroine and hero were telegraph operators and the book was printed in 1879.

The writer never did meet the person she 'talked' to so regularly but she never married anyone else, either. Nor did she ever write another novel.

A bit of fun for the start of the year.

Nets and the weather

As usual the first part of the ALARA Net each Monday (at 3.58MHz approx) is devoted to a report on the local weather.

Last week, although June VK4SJ was not on air we heard about her weather, as well. Shirley VK5JSH had participated on the 222 (14.222MHz) net during the afternoon when June had told

them she had had between 5 and 6 INCHES of rain, over 150 mm, in the last couple of days.

The southern part of Australia is struggling with one of the most severe droughts in 30 or 40 years and Southern Queensland has as much rain in a couple of days as Adelaide has in half a year. It is an amazing country.

Please join either the 222 Net at 0530Zulu or the ALARA net at 1030Zulu daylight saving months or 1000Zulu normal time months. We would love to have you. You would find the range of topics discussed interesting and you would become much more aware of how similar we are and how different as well. There is always someone to share you particular interest.

We know there are a number of OMs who listen. Please join us after the first round or so, we are happy to have you.

The Luncheons

These will be held as usual. Please contact Bron VK3DYF or Gwen VK3DYL to check on the venue if you are in Melbourne on the second Friday of the month as the usual venue is undergoing renovations. The regulars still meet, however, so you do not need to miss out! Unfortunately a recent trip to Melbourne was poorly timed on my part!

In Adelaide the "Pancake Kitchen" in Southern Cross Arcade is still as before. Everyone is welcome. The numbers have been down during the holidays though it was good to have Tina with us in January. A teacher's lot is not a happy one when it means you miss out on such an exciting activity as an ALARA luncheon.

In VK6 they meet on the third Friday instead of the second one. In case they have also had to change their venue it is probably best to ring Poppy VK5YF and check.

Two Dates For Your Contest Diary

Clara and Family HF contest March 2003

The date for this contest has been moved so it is now on a weekend. We hope more people, YLs and OMs, will participate.

It is an unusual contest in that if you have a CLARA member in your family you score more points for those who contact you. What a great idea.

There are multipliers for the 14 different Canadian call areas and we as DX YLs give our contacts extra points. Too.

CW 14.033, 21.033, 7.033, and 3.688 are the recommended call frequencies.

For phone try 28.300, 21.225, 14.120, 14.285, 7.200, 3.750, 3.900 are recommended.

The weekend of March 22nd and 23rd 2003. Starting and ending at 1700Zulu.

Just call "CQCLARA"
Have fun.

Thelma Souper Memorial Contest

This one is on the weekend of 5th and 6th April from 0700Zulu to 1000Zulu in the evenings. All contacts to be on 80 metres, so the VKs should be able to return the compliment for those ZLs who were in the ALARA Contest. CW or phone is permitted

There is a special station to look for, ZL6YL, and the number of WARO members, including the club callsign, act as multipliers for all the other contacts. Sound good?

WISHING YOU ALL A GOOD YEAR FOR 2003

Amateur Radio

...many things to many people

Have you learnt anything new in the last month?

Read Amateur Radio Magazine and find out what other Amateurs are doing

Contest Calendar March - May 2003

Mar	1/2	ARRL International DX Contest	(SSB)	(Feb 03)
Mar	1/2	Ukraine RTTY Contest		
Mar	8/9	RSGB Commonwealth Contest	(CW)	(Feb 03)
Mar	15/16	John Moyle Field Day	(CW/SSB)	(Feb 03)
Mar	15/16	Russian DX Contest	(CW/SSB)	
Mar	29/30	CQ WW WPX Contest	(SSB)	(Feb 03)
Apr	5/6	SP DX Contest	(CW/SSB)	
Apr	11/13	Japan International DX Contest	(CW)	(Feb 03)
Apr	19	Holyland DX Contest	(CW/SSB)	
Apr	19	TARA PSK31 Rumble		
Apr	19/20	YU DX Contest	(CW/SSB)	
Apr	25	Harry Angel Memorial Sprint	(CW/SSB)	(Feb 03)
Apr	26/27	Helvetia Contest	(CW/SSB)	
May	3	IPA Contest	(CW)	
May	3/4	10-10 Intl. Spring QSO Party		
May	3/4	ARI International DX Contest	(All)	
May	4	IPA Contest	(SSB)	
May	10/11	Volta RTTY DX Contest		
May	10/11	CQ-M International DX Contest	(CW/SSB/SSTV)	
May	16/17	Anatolian WW RTTY Contest		
May	17/18	King of Spain Contest	(CW)	
May	24/25	CQ WW WPX Contest	(CW)	(Feb 03)
May	24	VK/trans-Tasman Contest	(SSB)	(Apr 03)
May	31	QRP Day		

Results CQ WW DX CW Contest 2001

(VKs only Call \Band \Score)

Single Operator High Power

VK8AV	All	583,347
VK8TX	All	29,458
VK2QF	All	20,100
VK6VZ	28	339,694
VK4DX	All	761,634
VK2DPD	All	252,623
VK4XY	28	260,508
VK4TT	28	108,966
VK3FEI	21	572
VK6LW	14	588,252
VK2IA	7	46,297

Single Operator QRP

VK6AA/2	21	378
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Rules Harry Angel Memorial Sprint

1100z - 1246z Friday 25 April, 2003

This is the fifth year of a Contest to remember VK's oldest licensed operator, Harry Angel. Please note the time length of the Contest - 106 minutes, Harry's age when he died in 1998. It is open to all appropriately qualified HF operators.

Object is to make as many contacts as possible on band 80 metres, using modes CW and SSB.

Categories: Single Operator (CW, Phone, Mixed) and SWL.

Frequencies: CW: 3500 - 3700 kHz, Phone: 3535 - 3700 kHz. Contacts in DX window not permitted.

Exchange RS(T) and serial number starting at 001.

Score two points per CW QSO and one point per Phone QSO.

Stations may be worked once only per mode.

Logs must show time UTC, callsign worked (both callsigns for SWLs), mode, RS(T), serial numbers sent and received for each QSO.

Send summary sheet showing name and date of Contest, name and callsign of entrant, category entered, address, equipment used, points claimed and a signed declaration that the rules and spirit of the Contest were observed.

Send logs to Harry Angel Sprint, 363 Nepean Highway, Chelsea, 3196, by Friday, 23 May, 2003. Logs may be sent by email to: yk3js@vkhham.com

Japan International DX Contest 2003

LF CW: 2200z 10 Jan - 2200z 12 Jan

HF CW: 2300z 11 Apr - 2300z 13 Apr

PHONE: 2300z 7 Nov - 2300z 9 Nov

Object is to work as many JA stations + JD1 islands as possible.

Bands: LF CW 160/80/40; HF CW 20/15/10; Phone 80 - 10 (no WARC).

Categories: Single operator single/multi-band high power (more than 100 W o/p); single operator single/multi-band low power (less than 100 W o/p); multi-operator; maritime mobile.

General: Operate for maximum of 30 hours only and show rest periods in log; single op must perform all tasks himself; multi-op must remain on band for at least 10

minutes and during this time multi-op may transmit on another band only if new station is multiplier; ops may use spotting networks.

Exchange: RST plus CQ Zone number. JAs will send RST plus Prefecture number (01 - 50). **Score** on 160m four points; 80m two points; 40/20/15m one point; 10m two points.

Multiplier is total JA prefectures + JD1 islands worked (possible 50 per band).

Final Score: multiply total points by total multipliers.

Logs (one per callsign) must show

times in UTC; exchanges; multiplier first time worked; duplicate QSOs shown as no points; rest periods clearly marked; use separate sheet for each band.

Send Logs and summary sheet to: JIDX Contest, c/o Five-Nine Magazine, PO Box 59, Kamata, Tokyo 144, Japan, by 28 Feb, 31 May or 31 Dec. Logs may be submitted on 3.5 inch disk in ASCII with summary sheet, or by e-mail. For instructions send e-mail to <jidx-info@n.nal.go.jp> with command #get jidxlog.eng or #get jidxlog.jp

Rules Commonwealth Contest

The Commonwealth Contest promotes contacts between stations in the Commonwealth and Mandated Territories. A more relaxed contest environment which gives the opportunity to work some choice DX.

Date: 8-9 March, 2003

Time: Saturday 1000 - Sunday 1000 UTC

Bands: 3.5, 7, 14, 21, 28 MHz.

Mode: CW.

Exchange: RST plus serial number.

1. Eligible entrants:

UK entrants must be members of the RSGB and may not use special GB, GX etc) callsigns nor be /MM or /AM.

Overseas - Licensed radio amateurs within the Commonwealth or British Mandated Territories. Apart from section (c), all entries must be single operator and may not receive any assistance whatsoever during the contest, including the use of spotting nets, packet cluster or other assistance in finding new contacts or bonuses.

2. Sections:

- Open, no limit on operating time.
- Restricted, operation is limited to 12 operating hours.

Off periods must be clearly

marked and be a minimum of 60 minutes in length.

- Headquarters stations, one only per Commonwealth Call Area and may be multi-operator.

3. Frequencies:

Entrants should operate in the lower 30 kHz of each band.

4. Scoring:

Contacts may be made with any station using a Commonwealth Call Area prefix, except those within the entrant's own call area. Note that for this contest, the entire UK counts as one call area, and therefore UK stations may not work each other.

Each contact scores 5 points with a bonus of 20 points for each of the first three contacts with each Commonwealth Call Area on each band.

5. Headquarters stations:

A number of Commonwealth Society HQ stations will be active during the contest and will send 'HQ' after their serial number, to identify themselves.

Every HQ station counts as an additional call area and entrants may contact any HQ station (including in their own country) for points and bonuses.

6. Logs:

Each entry must be accompanied by a summary sheet indicating the section entered and the scores claimed on each band.

- Paper Logs: Separate logs and lists of bonuses claimed are required for each band.
- Computer Logs: In any format approved by the Society, showing clearly the points and bonuses claimed for each contact.

In both cases entrants are requested to include a duplicate check list with their entry.

7. Closing date for logs:

Logs must be postmarked no later than 7 April, 2003.

8. Awards:

- Open: The Senior Rose Bowl to the overall leader.
The Col Thomas Rose Bowl to the highest-placed UK station.
- Restricted: The Junior Rose Bowl to the section leader.
The Ross Carey Rose Bowl to the highest placed UK station.
- A Commonwealth Medal will be awarded to the entrant who in the opinion of the HF Contests Committee has most improved their score or contributed to the contest over the years.

Rules CQ World-Wide WPX Contest 2003

SSB: March 29-30, 2003 CW: May 24-25, 2003

Starts: 0000 GMT Saturday Ends: 2359 GMT Sunday

I. Contest Period:

Only 36 hours of the 48 hour contest period permitted for Single Operator stations. Off periods must be a minimum of 60 minutes in length and clearly marked in the log. Listening time counts as operating time. Multi-Operator stations may operate the full 48 hours.

II. Objective:

Object of the contest is for amateurs around the world to contact as many amateurs in other parts of the world as possible during the contest period.

III. Bands:

The 1.8, 3.5, 7, 14, 21 and 28 MHz bands may be used. No WARC bands allowed.

IV. Types of Competition (for all categories):

All entrants must operate within the limits of their chosen category when performing any activity that could impact on their submitted score. Transmitters and receivers must be located within a 500 metre diameter circle or within the property limits of the station licensee, whichever is greater. All antennas must be physically connected by wires to the transmitters and receivers used by the entrant. Only the entrant's callsign can be used to aid the entrant's score. A different callsign must be used for each entry.

1. Single Operator (Single Band and All Band)

- (a) Single operator stations are those at which one person performs all of the operating, logging, and spotting functions. Only one transmitted signal is allowed at any time. Maximum power allowed is 400 watts total output power for VKs.
- (b) Low Power: Same as 1(a) except that output power shall not exceed 100 watts. Stations in this category will compete with other low power stations only.
- (c) QRP/p: Same as 1(a) except that output power shall not exceed 5 watts. Stations in this category will compete with other QRP/p stations only.

(d) Assisted/with Packet: Same as 1(a) except the passive use (no self-spotting) of DX spotting nets or other forms of DX alerting are permitted. Stations in this category will compete with other Assisted stations only.

(e) Tribander/Single Element (TS): Tribander (any type) with a single feedline from the transmitter to the antenna and single element (TS) category. During the contest, an entrant shall use only one (1) tribander for 10, 15, 20 metres and single-element antennas on 40, 80, and 160.

(f) Band Restricted (BR): An eligible entrant must hold a licence restricting operation to less than the six (6) contest bands (160, 80, 40, 20, 15, 10) on both modes.

(g) Rookie (R): An entrant in this category shall have been licensed as a radio amateur three (3) years or less.

2. Multi Operator (All-band operation only)

(a) *Single-Transmitter*: Only one transmitter and one band permitted during the same time period (defined as 10 minutes). *Exception*: One - and only one - other band may be used during any 10-minute period if - and only if - the station worked is a new multiplier. Use separate serial numbers for the multiplier station. Logs found in violation of the 10-minute rule will be automatically reclassified as multi-multi. Maximum power allowed is 400 watts total output power. Your log MUST show the correct serial number sent for each contact.

(b) *Multi-Transmitter*: No limit to transmitters, but only one signal and running station allowed per band. Note: All transmitters and receivers must be located within a 500 metre diameter area or within property limits of the station licensee, whichever is

greater. All operation must take place from the same operating site. Maximum power allowed is 400 watts total output power.

3. Use of Packet:

Passive use of packet or internet DX spotting nets is permitted only for Single Operator Assisted/with Packet, Multi-Operator Single Transmitter and Multi-Operator Multi-Transmitter stations only. No self-spotting by a station or one of its operators is permitted. Stations engaging in self-spotting will be disqualified.

V. Exchange:

RS(T) report plus a progressive contact three-digit serial number starting with 001 for the first contact. (Continue to four digits if past 999 and five if past 9999).

Multi-operator multi-transmitter stations use separate serial numbers for each band. Your log MUST show the correct serial number sent for each contact.

VI. Points:

- (a) Contacts between stations on different continents are worth three (3) points on 28, 21 and 14 MHz and six (6) points on 7, 3.5 and 1.8 MHz.
- (b) Contacts between stations on the same continent, but different countries, are worth one (1) point on 28, 21 and 14 MHz and two (2) points on 7, 3.5 and 1.8 MHz.
- (c) Contacts between stations in the same country are worth 1 point regardless of band.

VII. Multiplier:

The multiplier is the number of "valid" prefixes worked. A PREFIX is counted only once regardless of the number of times the same prefix is worked.

- (a) A PREFIX is the letter/numeral combination which forms the first part of the amateur call. Examples: N8, W8, WD8, HG1, HG19, KC2, OE2, OE25, etc.

Any difference in the numbering, lettering, or order of same shall

constitute a separate prefix. A station operating from a DXCC country different from that indicated by its callsign is required to sign portable. The portable prefix must be an authorized prefix of the country/call area of operation. In cases of portable operation, the portable designator will then become the prefix.

Example: N8BJQ operating from Wake Island would sign N8BJQ/KH9 or N8BJQ/NH9. KH6XXX operating from Ohio must use an authorized prefix for the U.S. 8th district (W8, K8, etc.).

Portable designators without numbers will be assigned a zero (Ø) after the second letter of the portable designator to form the prefix. Example: PA/N8BJQ would become PAØ.

All calls without numbers will be assigned a zero (Ø) after the first two letters to form the prefix. Example: XEFTJW would count as XEØ.

Maritime mobile, mobile, /A, /E, /J, /P, or interim licence class identifiers do not count as prefixes. You may not make up your own prefix.

- (b) Special event, commemorative, and other unique prefix stations are encouraged to participate. Prefixes must be assigned by the licensing authority of the country of operation.

VIII. Scoring:

1. Single Operator:

- (a) All Band score = total QSO points from all bands multiplied by the number of different prefixes worked (prefixes are counted only once).

- (b) Single band score = total QSO points on the band multiplied by the number of different prefixes worked.

2. Multi Operator: Scoring is the same as Single Operator, All Band.

3. A station may be worked once on each band for QSO point credit. Prefix credit can be taken only once.

IX. QRP/p Section:

Single Operator only. Output power must not exceed 5 watts. You must denote QRP/p on the summary

sheet and state the actual maximum output power used for all claimed contacts. Results will be listed in a separate QRP/p section and certificates will be awarded to each top-scoring QRP/p station in the order indicated in Section XI.

X. Low Power Section:

Single Operator only. Output power must not exceed 100 watts. You must indicate low power on the summary sheet and state the actual maximum output power used for all claimed contacts. Results will be listed in a separate low power section and certificates will be awarded to each top-scoring low power station in the order indicated in Section XI.

XI. Awards:

Certificates will be awarded to the highest scoring station in each category listed under Section IV.

1. In every participating country.
2. In each call area of the United States, Canada, Australia, and Asiatic Russia.

All scores will be published. To be eligible for an award, a single operator station must show a minimum of 12 hours of operation and multi-operator stations must show a minimum of 24 hours of operation.

A single band log will be eligible for a single band award only. If a log contains more than one band, it will be judged as an all band entry unless specified otherwise.

In countries or sections where entries justify, second- and third-place awards will be made.

XIII. Club Competition:

A trophy will be awarded each year to the club that has the highest aggregate scores from logs submitted by members. The club must be a local group and not a national organization. Participation is limited to members operating within a local geographical area. (Exception: DXpeditions specially organized for operation in the contest and manned by members).

Indicate your club affiliation on the summary sheet or in the CABRILLO file. To be eligible for an award, a minimum of three logs must be received from a club.

XIV. Log Instructions:

- (a) All times must be in GMT. All

breaks must be clearly marked (not required for CABRILLO logs). Single operator and multi-single logs must be submitted in chronological order. Multi-multi logs must be submitted chronologically by band.

- (b) All sent and received exchanges are to be logged.
- (c) Prefix multipliers should be entered only the FIRST TIME they are worked.
- (d) Logs must be checked for duplicate contacts, correct QSO points, and prefix multipliers. Duplicate contacts must be clearly marked. Computerized logs must be checked for typing accuracy. Original logs may be requested if further cross-checking is required.
- (e) An alpha/numeric check list of claimed PREFIX multipliers must be submitted with your log.
- (f) Each entry must be accompanied by a Summary Sheet listing all scoring information, the category of competition, and the entrant's name and mailing address in BLOCK LETTERS. Also submit a signed declaration that all contest rules and regulations for amateur radio in the country of operation have been observed.
- (g) Official log and summary sheets are available from CQ. Fax your request to CQ. You may make your own forms as long as all required information is present.
- (h) Electronic submission of logs is encouraged for all participants, and is required for all top scoring entrants and all who use a computer to log or prepare the logs. The CABRILLO format is preferred. Please insure that you fill out all of the header information including your club affiliation. If you submit a CABRILLO log, no additional summary sheet is required. For instructions on filling out the CABRILLO header, see the WPX Contest web site. Failure to fill out the header correctly could result in your entry being placed in the wrong category.
- If you cannot submit a CABRILLO log, you may submit the ASCII output from most of the popular logging programs such as TR, CT, NA, Writelog and SuperDuper. You

may also submit the *.BIN,*.DAT *.QDF files from CT, TR or NA. If the log is not in CABRILLO format, a separate summary sheet is required. Please name your files with your call and the file type.

Example: N8BJQ submits a CABRILLO file. It should be named N8BJQ.CBR. If N8BJQ chose to submit a non CABRILLO file such as TR's .dat file, he should name the log file N8BJQ.DAT and the summary file should be N8BJQ.SUM. See the WPX web site for more information on email log formats. Logs sent on disk should be on 3.5" disks.

(i) E-mail is the preferred method of log submission.

SSB logs should be sent to: wpsssb@kkn.net

and CW logs should be sent to: wpxcw@kkn.net

Non-CABRILLO internet or disk submissions require a summary sheet as well as the log file. All logs received via e-mail will be confirmed via e-mail. A listing of

logs received can be found on the CQ WPX website at: <http://home.wohr.ru.com/wpx/> and will be updated frequently.

XV. Disqualification:

Violation of amateur radio regulations in the country of the contestant, or the rules of the contest, unsportsmanlike conduct, taking credit for excessive duplicate contacts, unverifiable QSOs or multipliers will be deemed sufficient cause for disqualification. An entrant whose log is deemed by the WPX Contest Committee to contain a large number of discrepancies may be disqualified as a participant operator for a period of one year. If within a five-year period the operator is disqualified a second time, he will be ineligible for any CQ contest awards for three years.

The use of non-amateur means such as telephones, FAX, telegrams, packet, e-mail, etc., to solicit contacts or multipliers during the contest is unsportsmanlike and the entry is subject to disqualification. Self-spotting is grounds for disqualification.

Declaration: Submission of an entry in the CQ WPX Contest implies that you have read and understood the rules of the contest and agree to be bound by them, as well as all rules of your country which pertain to amateur radio. Actions and decisions of the WPX Contest Committee are official and final.

XVI. Deadline:

All entries must be postmarked NO LATER than May 1, 2003, for the SSB section and July 1, 2003, for the CW section. E-mail logs are also subject to these deadlines. Indicate SSB or CW on your envelope. One extension of up to 30 days, for legitimate reasons, may be granted if requested from the contest director. Logs postmarked after the deadline, or extension deadline, if granted, may be listed in the results, but will be ineligible for any awards. Check the WPX website for instructions on mailing WPX logs.

All logs go to:

CQ Magazine,
WPX Contest,
25 Newbridge Road,
HICKSVILLE, NY 11801, USA

Silent Key

Patrick Charles Ryan VK3BIT

28.02.1917-11.10.2002.

Charlie was born in Footscray and then spent most of his childhood in Shepparton. The family moved to O'Heas St in Coburg before the war and here Charlie joined the Coburg Cycling Club. He told me that he used to ride up the Sydney Road to Kilmore three times a week for training.

Enlisting in the army, he was sent to a signals regiment and saw active service in the Islands, where he attained the rank of Sergeant. Maintaining an interest in the R.S.L. he was the Coburg Marshal for the ANZAC Parade each year until 2001 when he became too ill to carry it on.

After returning home he worked for Kraft for some time before joining the Telephone Construction Company as technical officer in charge of installation and maintenance of internal office telephones. He remained with this firm until he retired.

During this period we became good

friends and he took me to work in the city for several years. During this time he obtained his Amateur Licence, VK3BIT. He was very well known on the local nets and on the DX bands, where he made numerous friends in USA and Canada keeping some contacts daily, depending on conditions, for many years. Some of his DX contacts visited him, some several times.

After he retired we enjoyed contacts on the 757 net at 0830 daily with Alan VK3JLT, Ian VK3KIS, Reg VK3LS, Don VK3NP, Jack VK3BKN and Len VK3BYE. The last couple of years he was intermittent in attendance due to bouts in hospital. His other passion was GOLF and he was ready to talk that at the drop of a hat.

He was a good friend to me and will be sadly missed by our gang, Claire, his wife, two sons and two daughters as well as the grandchildren.

73 Chas from Allen VK3SM.

Over to you

Re the tribute to Silent Key VK3AGV by VK2SIG in September AR

I found this very interesting reading but the claim attributed to the late Alan Vagg that "An aunt was the last female telegraphist of the Post Office Telegraph Service, retiring in the 1920s" cannot be correct.

In March 1949 the Brisbane Telegraph newspaper (now defunct I believe) printed a photograph of Miss Lily Wiseman pounding the brass in the Brisbane C.T.O. I also recall a middle-aged lady operating Morse in the Hobart Chief Telegraph Office about the middle of 1943.

Post-war of course, there were many female teleprinter and Murray Multiplex operators employed by the P.M.G.'s Department.

Ray Jones VK7RQ

Victorian Amateur wins the first Wadda Cup

Vince Henderson, VK7VH
2002 Wadda Cup Contest Manager.

The Central Highlands Amateur Radio Club of Tasmania (CHARCT) held the inaugural 80 m dash for the Wadda Cup on Thursday, 28 November 2002. The winner was Keiran Blyth, VK3BTU. Keiran achieved the highest score during the 30 minutes that the contest was held. The Wadda Cup result shows that the contest was closely fought. Keiran's margin was just 2 contact points.

When Keiran was advised of the official result, he said, "Winning the Wadda Cup Contest was even sweeter, considering this is the first time that it has been held". One of the conditions of winning the contest is that the following year, the winner will be the contest manager and operate the CHART club call sign, VK7CHT. Keiran said "it will be strange operating as VK7CHT portable VK3, but I am looking forward to the challenge of making the 2003 contest a successful event".

CHART President Bob Geeves, VK7KZ, said "I am very pleased that the contest proved to be a popular event and I would like to say thank you to all those that participated in the Wadda Cup". Bob also said, "I was particularly pleased with the number of VK7's that made the effort to give out numbers during the contest".

In an effort to keep the 80 m dash for the Wadda Cup interesting, the contest manager for each event will have the option to fine tune the contest rules. Anyone who has any suggestions about the format of the contest and possible changes can be assured that the contest manager will take any suggestion on board and include a change that may be popular or encourage participation.

Changes for the 2003 Wadda Cup include:

- The time and date for the 2003 Wadda Cup has been changed to Saturday, 21 June 2003, commencing at 1030 UTC (2030 EST). The contest duration will be 60 minutes. The contest date will enable better participation from VK5, VK6 and VK8. The time extension, from 30 minutes to 60 minutes, should encourage more amateurs that are familiar with sprint type contests whilst still being easy enough for first time contesters.
- The score roll call will remain. All stations that entered the 2002 contest thought that the on air roll call, held immediately after the contest to find out the provisional winner, was a great idea.
- VK7CHT will announce the contest start on 3.585 MHz, thereafter; VK7CHT will abide by the contact and move rule as per the 2002 event. This will make it a little harder for participants to earn the extra bonus points for contacting VK7CHT.
- A new section will be included to encourage entry from SWLs. A special certificate will be given to the highest SWL score.
- Full 2003 contest rules will appear in a coming issue of *Amateur Radio*

Magazine. Details may also be found on the CHART web site www.vk2ce.com/vk7cht

On a personal note, I would like to pass on my thanks to all amateurs that participated in the 2002 Wadda Cup and to those that sent their logs to me for score checking. The contest grew out of an on air discussion on how we could generate 80 m on air activity. The event was meant to be a fun affair and I think that everyone will agree that it turned out to be just that. I certainly enjoyed being the contest manager for the first Wadda Cup, a job made easy because of the encouragement of many amateurs.

I urge all Australian amateurs to have a go at the 2003 event. Good luck and happy contesting.

73's

Vince Henderson, VK7VH
ar

The 2002 80 m dash for the Wadda Cup results

Call sign	Score		
VK3BTU	20 ***	***	Wadda Cup winner
VK7EK/P	18 **	**	2 nd place certificate
VK3MGZ	18 **	*	Inaugural event participant certificate
Call sign	Score	Call sign	Score
VK3FIM	18 **	VK3JSS	14 *
VK7LJ	18 **	VK2CE	14 *
VK7EE	18 **	VK7NDO	13 *
VK7MRY	18 **	VK7LS	10 *
VK7KBE	16 *	VK2LCD	8 *
VK3KMB	15 *	VK5DP	7 *
VK3FH	15 *	VK3COL	5 *

"Hey, Old Timer..."

If you have been licensed for more than 25 years you are invited to join the



Radio Amateurs Old Timers Club Australia

or if you have been licensed for less than 25 but more than ten years, you are invited to become an Associate Member of the RAOTC.

In either case a \$5.00 joining fee plus \$8.00 for one year or \$15.00 for two years gets you two interesting OTN Journals a year plus good fellowship.

Write to

RAOTC,
3/237 Bluff Road
Sandringham VIC 3191

or call Arthur VK3VQ on 03 9598 4262 or Allan VK3AMD on 03 9570 4610, for an application form.

Horizontal Loop For 80 Mx DX

In QST for August 2002 John S Belrose VE2CV investigated an 80 metre horizontal loop for DX work using W7EL's EZNEC Pro NEC-4D simulation. He carried out simulations of a loop design by W Bolt DJ4VM and a horizontally polarised loop operating in W8JK mode proposed by Paul Carr N4PC. The difference between these designs is that the feed to the sides of the loop is in phase in the DJ4VM design and the feedline is transposed to give out of phase feed in the manner of an W8JK antenna. The antenna article was also discussed in the Technical Topics Column of Pat Hawker G3VA in Radio and Communications for October 2002.

The two antennas are shown in Fig 6. The loop modelled was a full wave loop, 20 metres on each side, at a height of 15 metres above average ground at 3.75 MHz. The wire used was No 12 copper.

The DJ4VM design will have radiation vertically which will give good local

NVIS coverage. It also will work over several bands. The antenna is shown in Fig 6(B).

The W8JK fed design from N4PC is shown in Fig 6(A). This design has a null overhead and the main lobes are at lower angles which should help when looking for DX. The computed radiation pattern is shown in Fig 7.

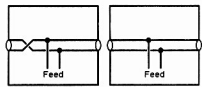
As well as the overhead null the antenna exhibits some directionality which could also be useful. The system impedance was also computed and is shown in Table 2. The pattern of the antenna is shown in Fig 7.

The antenna can be matched on 80 metres with an L match which uses the antenna feed impedance together with two capacitors to match the antenna to 50 ohms. A 130 pF series capacitor in the antenna feed (a 200pF variable), together with a 2139 pF capacitor across the 50 ohm feed, allows the use of coax feed via a 1:1 current balun. The current

balun could be a simple coil of coax. See Fig 8 for the L match. See Fig 9 for a switched feed arrangement allowing coaxial cable feed on 80 metres and open wire feed to an ATU on other bands.

Table 2. System Impedance.

Frequency (MHz)	Impedance (ohms)
75.75	$6.8 + j343$
2.2	$135 - j37$
10.14	$67 - j12$



©2002 NC3048

Fig 6(A). Top view of simulated quad loop, N4PC, with transposed phasing lines (W8JK feed). (B) Top view of DJ4VM loop.

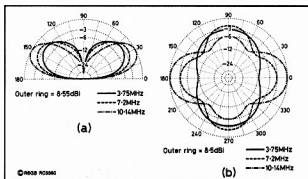


Fig 7. Principal Plane elevation (A) and azimuthal (B) patterns of the antenna at a height of 15 m over average ground.

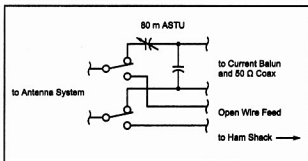


Fig 9. Switching Feed lines between 80 m L match and open wire feed for other bands.

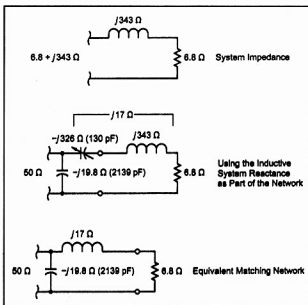


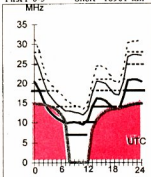
Fig 8. Step Up L Match Design for 80 metres.

PLAN AHEAD
Place your Club's event
here!

Adelaide-Ottawa

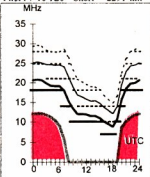
58

First F 0-5 Short 16901 km

**Brisbane-Auckland**

123

First F7-10 1E0 Short 2291 km

**March****2003**

T index: 81

Legend

UD

E-MUF

QWUE

F-MUF

A1E

>10%

>50%

>90%

Time scale

Frequency scale

HF Predictions

by Evan Jarman VK3ANI

34 Alandale Court Blackburn Vic 3130

These graphs show the predicted diurnal variation of key frequencies for the nominated circuits.

These frequencies are identified in the legend are:-

- Upper Decile (F-layer)
- F-layer Maximum Usable Frequency
- E-layer Maximum Usable Frequency
- Optimum Working Frequency (F-layer)
- Absorption Limiting Frequency (D region)

Shown hourly are the highest frequency amateur bands in ranges between these key frequencies, when usable.

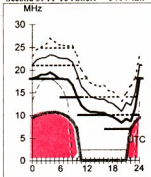
The path, propagation mode and Australian terminal bearing are also given for each circuit.

These predictions were made with the Ionospheric Prediction Service program: ASAPS Version 4

Adelaide-Singapore

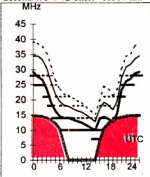
311

Second 3F11-16: Short 5414 km

**Brisbane-Los Angeles**

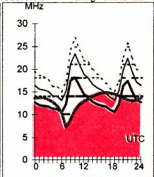
59

Second 4F3-7 4E Short 11564 km

**Canberra-London**

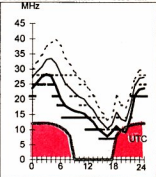
136

First F 0-5 Long 23042 km

**Darwin-Honolulu**

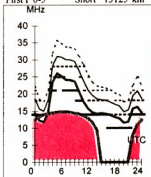
65

Second 4F8-15 4I Short 8635 km

**Adelaide-Tel Aviv**

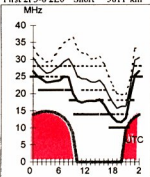
291

First F 0-5 Short 13125 km

**Brisbane-Manila**

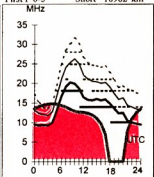
320

First 2F3-8 2E0 Short 5811 km

**Canberra-London**

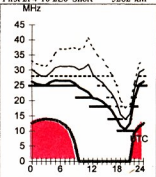
316

First F 0-5 Short 16982 km

**Darwin-Osaka**

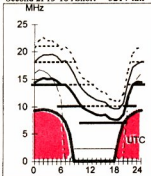
5

First 2F4-10 2E0 Short 5262 km

**Adelaide-Wellington**

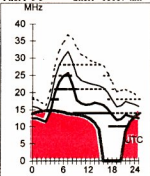
114

Second 2F13-18: Short 3214 km

**Brisbane-Rome**

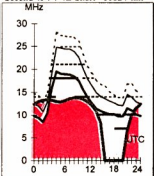
305

First F 0-5 Short 16107 km

**Canberra-Pretoria**

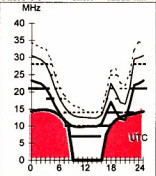
231

Second 4F4-7 4E Short 10824 km

**Darwin-Seattle**

44

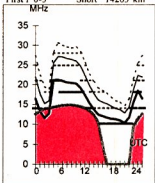
First F 0-5 Short 12282 km



Hobart-Cairo

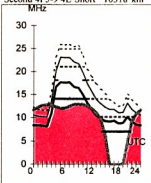
278

First F 0-5 Short 14263 km

**Melbourne-Capetown**

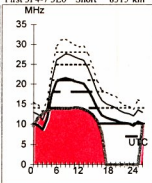
222

Second 4F5-9 4E Short 10318 km

**Perth-Johannesburg**

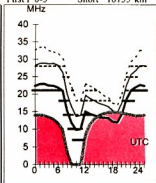
148

First 3F4-7 3E0 Short 8315 km

**Sydney-Barbados**

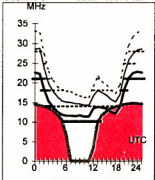
119

First F 0-5 Short 16155 km

**Hobart-Chicago**

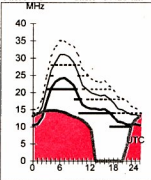
72

First F 0-5 Short 15576 km

**Melbourne-Moscow**

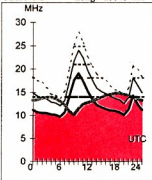
316

First F 0-5 Short 14428 km

**Perth-London**

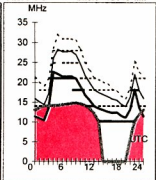
133

First F 0-5 Long 25543 km

**Sydney-Nairobi**

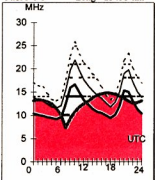
255

First F 0-5 Short 12148 km

**Hobart-Oslo**

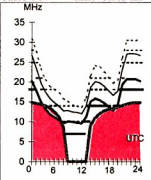
138

First F 0-5 Long 23451 km

**Melbourne-Quebec**

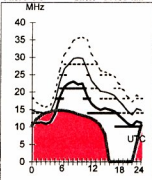
60

First F 0-5 Short 16903 km

**Perth-London**

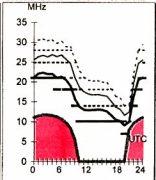
313

First F 0-5 Short 14481 km

**Sydney-Seoul**

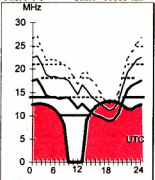
340

Second 4F8-13 4I Short 8925 km

**Hobart-Santiago**

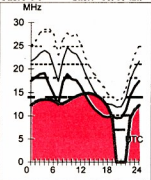
149

First F 0-5 Short 10688 km

**Melbourne-Senegal**

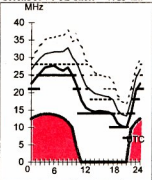
219

First F 0-5 Short 16910 km

**Perth-Tokyo**

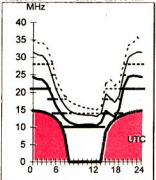
20

Second 3F4-9 3E0 Short 7923 km

**Sydney-Vancouver**

45

First F 0-5 Short 12501 km



Education Notes

Ron Smith
VK4AGS
Federal Education Officer

Do you object?

One of the educational phenomena which had its heyday in the 1960s and 1970s is 'Objective Testing' or 'Multiple-Choice Exams'.

The use of these continues today in exams for amateur radio qualifications, vocational education, 'on-line' assessment for a range of services, aptitude and IQ tests, standardised tests in the school system, and as part of the assessment systems for schools and institutions.

The big push to the multiple-choice style of exam back then was as a consequence of a belief that such exams were objective, and not subjective. At the time in Australia there was a perception in the community that where other forms of assessment were involved there was scope for bias and inconsistency in marking or correction.

The examinations for amateur radio qualifications were not immune from such allegations.

Another problem was that the longer answers took considerable time and effort to actually do the marking. So a system which could be machine marked or marked by an army of clerks was very attractive. It was perceived that such a system would be more efficient and eliminate the bias in 'examiners'.

One other attraction which was supported by educationalists was that this type of question targets a specific piece of knowledge. There is only one 'right' answer. There are not acceptable alternative answers.

However, it was soon realized that to design a valid multiple-choice examination is a very difficult process. It is easy to write questions but it is very hard to make a full examination accurate and valid. Some educational systems can spend several tens of thousands of dollars to research and validate a single question.

On the other hand, this type of examination is not suitable for the wide range of human skills and abilities that would be expected of an educated person. It is limited in its scope.

In the educational climate of the time

it actually was successful. Two main features of the system nearly half a century ago enabled this to occur.

One was that course specifications, syllabi if you like, were mainly a list of topics without much guidance into standards.

The other was that the educational system, not for amateur radio though, was a ranked system where a certain fraction of the candidates will pass and a certain fraction will fail, regardless of the actual scores on the exams.

If this latter feature is put in amateur radio context it was like having a situation where at any one time, say the exams conducted during a month, only a third will pass and two thirds will fail. While this is unacceptable in today's amateur radio community as well as the wider community, such practices still do exist in educational institutions, particularly the bigger and older ones.

In spite of the marking system, there is scope for subjectivity in this style of examination.

Subjectivity exists in the actual design of questions. Subjectivity exists in the selection of questions from databases, in the specification of the allowable question styles (and there are many, but only one is allowed for Australian amateur radio exams), actual question design, in the topic emphasis in exam design, and in the acceptable result for an award (the 'magic' 70% for amateur radio).

One method that is believed by some to reduce the subjectivity of exam design is to use computers to randomly select questions.

This reduces one area of subjectivity but the other factors remain. It introduces as a new idea to be considered, the variability of the degree of difficulty of questions. There are some programs which use some 'difficulty factor' and they are very helpful. However, there is subjectivity in determining the 'difficulty factor'.

Variability can appear in another way that many people miss. That is the relevance in educational context.

When multiple-choice was introduced into Australian amateur radio examinations the educational culture of the day heavily relied on this approach to examinations with a range of questions styles, including the one adopted for Australian amateur radio.

People whose educational experience was before that time, and those whose educational experience is well after that time, have different educational perspectives of multiple-choice examinations. Essentially people over about fifty and younger than about thirty, would find the current style more difficult than those between thirty and fifty.

With the 'multiple-choice' style of examination, the subjectivity and variability are there, but they are usually hidden. However, while educational systems used ranking ideologies and tried to measure the average performance of groups of students, this was not a significant problem.

However, in the latter quarter of the heyday of multiple-choice examinations, interestingly at about the time they were introduced into amateur radio in Australia, a significant change started to appear in the broader educational scene. This was the move away from 'ranking' to 'standards'.

The transition is still going on many years later. This long and continuing development time suggests the standards idea might be good but the implementation is difficult to do well.

The concept of standards started with simple specification of results necessary for a 'pass' and has progressed in the broader educational community to various and detailed specifications in syllabi and criteria documents. In a way the 'competencies' in vocational education and the 'outcomes' appearing in school education are part of this development.

Education is evolutionary, even if at times it is revolutionary. As the educational community improves at

continues next page



I regret to announce the passing of **VK3WG, William Rees (Bill) Gronow** on the 17th January 2003 in his 95th year. Bill was one of the very early amateur enthusiasts, his first licence being issued by the Department of Navy, long before there was a PMG. Bill was a life member of the WIA and now regrettably joins the ranks of the "silent keys".

David Gronow.

Email : be@babcom.com.au

With his passing ends an era during which many of his peers in the management of the WIA were also business minded and leaders of industry.

In latter years he was President of the Radio Amateurs Old Timers Association and that group's Historian.

A life member of the WIA, he had held position of WIA Victoria President 1935-41, and Federal WIA President in 1939, from 1947 to 1950, and again in 1954.

He is survived by two sons, David and Geoff. Sincere condolences to his family, and the many radio amateurs who had a close relationship with him.

Jim Linton VK3PC LMWIA, President WIA Victoria.

William (Bill) Rees Gronow VK3WG

It is with deep sadness we record the passing of WIA Elder Statesman, William (Bill) Rees Gronow VK3WG, on 17 January 2003, aged 94.

Bill served both the Wireless Institute of Australia and the Royal Australian Airforce with distinction, and also made notable contributions to several other organisations.

He had a life-long interest in radio communication starting from the age of 13 when he built a crystal receiver, and later passed a Morse code test to obtain a listening licence in 1921. In 1925 he gained his AOCF.

The east-west Melbourne to Perth air race in 1929 saw him heavily involved in the provision of communications by the WIA for this event. He also helped build and install the radio equipment for the Mackay Central Australia aerial expedition.

Also around that time he had an involvement with Alf Treager VK5AX who developed the pedal wireless, and early tests of it involved radio amateurs throughout Australia.

Bill Gronow was active on a sub-committee of WIA Victoria, which examined the commercial feasibility of a journal for the Institute, and with others brought Amateur Radio magazine into existence in 1933. Held the position of Editor 1936 to January 1941.

His other involvements with WIA Victoria included being part of the organisation of several successful annual exhibitions, which introduced amateur radio to the general public, and the disposals equipment distribution of wartime surplus equipment to WIA members.

When war broke out Bill Gronow organised Morse code training sessions for those wanting this skill in the RAAF. The sessions at the WIA Victoria rooms in Queen Street Melbourne saw the RAAF sending many candidates before the armed services eventually ran their own training.

He enlisted in the RAAF in early 1940 and became an officer in the Directorate of Signals involved in engineering design of automotive petrol and diesel engine power supplies, radio transmitting, receiving and direction finding aerial systems.

The final years of service found him in charge of technical development of signals and radar equipment.

On retirement from the RAAF he worked with several firms in the radio field and then set up his own business Zephyr Products that supplied microphones and other products. That company had a regular advertisement in AR magazine for many years.

Apart from amateur radio, Bill Gronow was involved with the Australian Inland mission and the Royal Flying Doctor Service (RFDS). He held a position on the Council of the RFDS and became convenor of its Federal Radio Committee.

He was very a knowledgeable and friendly character, and held the status of "elder statesman" of the WIA, and was an important link for the organisation to its pre-war and immediate post-war years.

Education Notes — concludes from previous page

specifying, interpreting, utilising, and certifying standards, it has become increasingly difficult in the wider educational community to reliably use multiple-choice style of examinations as the sole method of educational measurement, particularly in a single exam concept.

At this stage I am not arguing for or against any particular examination style. In the lead up article I mentioned that

any educational assessment in any format will always have some subjectivity and opinion.

We simply cannot escape this. We simply have to evaluate all the options available and look at the advantages and disadvantages.

When implemented properly, the main advantage of multiple-choice examinations comes after the

examinations. Results should be available reasonably quickly.

The main disadvantage is that the wider educational community would raise doubts about the validity of those results.

If you like, it is a balancing act.

Next time, I will look at another assessment scenario.

ar

Over to you

Poor Communications Vocabulary

I have recently been listening again to HF radio after a large number of years absence. I must comment on the poor radio communication technique used by most HF amateur operators, highlighted to me by a number of years operating as a Private Pilot.

An example callsign I heard recently was 'washington five america london zanzibar'.

In another case the operator was using his own alphabet, conditions were marginal and I could not interpret what he was trying to communicate due to 'alien word' substitutions.

As in the examples above, many (most?) amateur stations seem to use word alphabetic substitutions of their own manufacture or liking. Typical of these are 'america' 'london' 'zanzibar' 'washington' 'queen' etc etc, the list goes on and on.

The phonetic alphabet was specifically designed to use specific words and intonations to ensure that communications are understood is an *international agreement* to use certain words to describe certain letters of the alphabet.

Given this, why are amateur operators designing their own individual list?

Listen to aircraft controllers and pilots and you will not hear the non professional communications behavior demonstrated by many amateur operators.

The correct phonetic alphabet is published in the ARRL Handbook, and the RSGB Handbook plus many other publications, so why don't amateur operators use it? It only makes them sound 'amateur' in the other sense of the word.

Peter Cossins

Victor Kilo Three Bravo Foxtrot Golf

STANDARD NATO PHONETIC ALPHABET

Alpha, Bravo, Charlie, Delta, Echo, Foxtrot, Golf, Hotel, India, Juliet, Kilo, Lima, Mike, November, Oscar, Papa, Quebec, Romeo, Sierra, Tango, Uniform, Victor, Whiskey, X-ray, Yankee, Zulu.

Ed Note: The phonetic alphabet and its intonations is also published in WIA's own callbook!

Re Dinosaurs Dreaming 1

I'm glad that Fred Backer VK2JFB didn't let difficulties get in the way of getting himself an Amateur Radio licence - congratulations Fred, and welcome!

In his letter "Dinosaurs Dreaming" (AR, Feb 2003), Fred highlights the problems he encountered along the way. Reading between the lines, it would appear that most of the "WIA" problems can be traced to amateur apathy.

Re Lesson #1: (*Don't believe the website*) As a former VK2 and Federal webmaster, I'm well aware of the problem of "link rot", a problem easily solved if clubs take the trouble to inform the WIA promptly when they relocate their web sites. Contrary to popular belief, webmasters are not gifted in telepathy!

Clubs also need active and interested members to keep the clubs alive (vale Shoalhaven), and to ensure that their affiliates (e.g. the WIA) are kept informed of any changes, so that potential new members can be referred on.

Re Lesson #2: (*Don't believe the exam application form*) I don't know why the Exam Service took so long, but I would guess they aren't exactly swimming in volunteers to grade exams. If it's any comfort, Fred, my first licence (in EI land) took 13 MONTHS to arrive!

Likewise, someone at the VK2 office would be better placed to comment on the scheduling conflict.

Re Lesson #3: (*cash management matters more than exams*) I'll bet there were no spare "bodies" to deal with the cash sale. All the same, I agree that as the examinee under stress, you should have received priority at the time.

Re Lesson #4: (*Invigilator training could be better*) Agreed, the equipment should have been tested before use.

Re Lesson #5: (*VK2WIA is not interested in new voting members*) Someone at the office would be better able to comment on this.

The sooner we stop thinking about the WIA as "it" and "they" and start thinking in terms of "us", and act accordingly, the sooner we'll have a WIA that all amateurs can be happy to join.

In a hobby noted for being top heavy with retirees, one would think that there would be plenty of amateurs who could spare some time

to assist in running WIA services. In practice though, the same few "willing workhorses" put in all the effort, while the rest of the amateur community criticises them or ignores them, just happy that "at least somebody is doing something".

Now, imagine how different it would be if more amateurs were (to borrow Fred's phrase) "pro-active" to ensure that the WIA serves the needs of the amateur community.

Is the WIA worth keeping alive? Certainly! It's our insurance policy for continued access to the amateur bands. Unfortunately, too many are unwilling to cough up for insurance, unless they see the bushfires rapidly approaching their home, and by then it's too late.

The sooner we stop thinking about the WIA as "it" and "they" and start thinking in terms of "us", and act accordingly, the sooner we'll have a WIA that all amateurs can be happy to join. Remember that the WIA can only be as good as the people who take the trouble to support it.

73 Richard VK2SKY

PS: I'd also like to add my voice to that of Neville VK2YO in the same issue, regarding the Foundation Licence. Dumbing down is not the solution; rather, amateurs need to be active on a local level, to be SEEN enjoying the hobby, and openly welcoming those who show an interest.

For those who haven't noticed yet, hiding in the shack muttering that "the WIA should do something" hasn't provided the results we need.

Got something to say about Amateur Radio? This would be a great spot!

Re Dinosaurs Dreaming 2

My first comment to Fred, VK2JFB is to congratulate him on attaining his licence under such difficult conditions. Even more so because many other people would have given up in exasperation.

My second comment is that if all he says is true, then there is a real problem, which must needs be fixed.

My third comment is, that the most probable reason for all of this is that for any voluntary organization, there may be few people who do the work and many who watch and complain.

The solutions to the problems outlined in Fred's letter are blinking obvious. If you do not like what is going on in your voluntary organization, get in there and do something about it!

In closing, I agree with Fred's statement "Amateur radio can survive, but it needs an effective, pro-active organization..." but I disagree with "some more relevant organisation might spring up..."

It doesn't need something else springing up; it just needs the dinosaurs replaced by something more modern.

Let's be positive. Get in there and do something. Get your mates together and form a club. Get on the council or volunteer to help. Make it work. Take the WIA forward. There's your challenge.

Over to you.

Chris Flak VK2QV

For this reason, I object to his activities being promoted in AR.

J. Robertson.

(Call Sign and address supplied)

Why amateur radio is dying

I found the letter from Ashley Stephen Geelan in AR October 2002 most refreshing and interesting and I wish him well on his journey of discovery through amateur radio.

I have three comments to make.

1. Ashley, its great you've got onto the WIA but the journey really starts by joining an Amateur Radio Club and I hope there is one near you. After many fruitless years of trying to read the books and do the questions I was advised to join a Club and thanks to the Bayside and Sunshine Coast Clubs I learnt enough to pass my Theory, Regulation and Morse exams and qualify for my full call licence. I wouldn't be VK4KF if it hadn't been for the efforts of Joy, Tom and Ron. So the message is look around and find an active club and seek their help.

2. Amateur radio has many aspects. From your comments you seem to see amateur radio as being something like CB Radio except there are more bands with the sole benefit being intercommunication with a wider range of people. This is a perfectly valid view and I know a number of amateurs who are very happy that they know nothing about the technology or the medium of Radio. To them amateur radio is indeed CB Radio with more bands.

However I see these views, valid as they are, rather like the blind non-imbibber traveler being given a tour of the wine growing areas of France. Lots of communication and chatting but what a shame that none of the magic of the technology of wine growing, none of the physical achievements of the centuries in building stone upon stone the magnificent castles, villages, homes, none of the beauty of the region will ever be known to our traveler. So Ashley, what I am saying here is that at the outset you need to give hard consideration as to what sort of

experience you want in amateur radio? The blind non-imbibber or the one that sees and absorbs some of the magic that is amateur radio.

3. Finally Ashley let me say that amateur radio is not dying any more than the traditional skills of winemaking or any other endeavour where the activity has that element of magic and history about it.

I hope some one gives Ashley the opportunity to consider the range of things that are amateur radio before he decides how far he wants to go along the road of discovery.

Ken Fuller VK4KF

CQ to Teacher Hams

If you're a ham radio operator involved in education, either as a teacher, parent or school volunteer then Matt Ryan (VK2KVE) would like to hear from you.

Matt is setting up a national (and international) list of schools, (primary & secondary), which are able to participate in amateur radio activities. He is looking at ways that amateur radio can service the needs of the various primary and secondary syllabi (the sciences & geography in particular) and would, at this stage, like to make contact with as many schools as possible which have the capability for amateur radio through either a teacher at the school or a local mentor.

The Schools in Space Project, to be undertaken in 2003, is looking at developing strategies to allow students to participate in a variety of radio-astronomy and radio communications activities based around the amateur frequencies.

If you're a teacher operator (or know of one) and would like to get your classes involved in national and international contacts with other students please send an email to mjaryan@hotmail.com. You'll receive a short questionnaire to email back, and you'll be providing your students with a most unique opportunity to become involved with their peers in stimulating, interesting and unique educational activities. Further details about The Schools in Space Project can be found at www.radioastro.net

Matt Ryan VK2KVE,

The Schools in Space Project,

The Dick Smith Way ?

I must protest most strongly AR's promotion of "The Dick Smith Way" in their December issue.

I will quote from "CB Australia Vol1 No 4 regarding Dick Smith's submission for 'legalised CB' - "The system should be allocated on the 27MHz band with 18 channels corresponding to the US channels 3 through to 20"

In Vol. 1 No 5 "Bill Payne, Dick Smith and friends had something to celebrate with the announcement that CB would be legalised. It seems that Dick Smith hopes for 27MHz CB will be realised"

The channels that were being promoted by Dick Smith for legalised CB were in fact the 11 metre amateur Band. I fail to see how a person who was this instrumental in the loss of an entire HF band could be seen in any way to be a friend of amateur radio.

Hamads

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John Alcorn, VK2JWA, QTHR, Phone +61 - 02- 66215217 vk2jwa@sarc.org.au

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• **Operating manual and tuning manual for Swan Solid State SS-200**. Any cost paid for by VK3KMA. Mike Mobile 0438 721 337 or Phone 03 9721 1335

• **Service or maintenance manual for Marconi model TF-2002B** signal generator. All reasonable costs refunded. Drew VK3XU Phone 03 9722 1620

• **RT-85** for 2m use. Will swap **Philips FM-900** on 2m or monetary change. Michael VK3MSA QTHR. Phone 03 9808 9039, email mickd@alphalink.com.au

• **Wanted - any amateur who has experimented with, or attempted to receive, the 1200 MHz world band satellite transmissions.** Please contact Andy VK3DTC, email vk3dto@amsat.org or Phone 03 5382 1759

FOR SALE QLD

• **Yaesu FT-107**, no memory, 2 WARC bands, CW filter, a/c power supply, hand mic, S/N 9M030140, operator's and service manual and extension board with **Yaesu FV-107**, S/N 9M020327 \$500 ono. T Walker VK4BTW QTHR Phone 07 4638 3828.

FOR SALE SA

• **Yaesu Musem HF transceiver FT-101B S/N 107308**, \$250. **Yaesu Musem HF remote VFO** for above, **FV-101** S/N 318037, \$100. **Yaesu Musem transceiver all-mode 70 cm FT-780R** S/N 040995, \$500. **Kenwood transceiver 2 metres FM TR-7800 S/N 1040855** 10 watt, \$300. **Kenwood transceiver 2 metres FM TR-7730 S/N 2010819** 25 watt, \$250. **Microwave Modules 144/100s** 2 metre 100 watt linear amplifier with pre-amplifier, S/N 1001081145, \$300. **MFJ Enterprises TNC2 Packet Radio MFJ-1270B/1274**, \$200. **Klitzing 70CM1W100A** 70 cm 100 watt linear amplifier, \$500. **Bird Wattmeter model 43** S/N 92987 50 ohms, with 4 elements as follows: 200-500 MHz

• 10 W; 200-500 MHz 100 W; 100-250 MHz 250 W; 400-1000 MHz 1000 W. New condition. Complete with manual, \$750. **Lunar 6M3-60P six metre linear amplifier** 50 watt S/N 034301, \$250. **MFJ Signal Enhancer MFJ-752**, top quality device, \$300. **Andrews Type L45W N Male Helix** connector, brand new, for LDPS-50A helix coaxial cable, \$80. **Oskerblok SWR-200** meter, two, large, very rare, \$200 each. **GW RF Attenuator, model**

GAT-872, S/N 1090030, 8 switches, \$100. **Toyo SWR meters**, model T430 for 144 & 432 MHz, 120 watt, N connectors, two, \$100 each. **Datong morse code tutor** model D70, \$150. **MFJ RF Noise Bridge model MFJ-202**, \$100. **Cipsal manual morse code keys**, two, \$50 each. **Eric VK5LP QTHR** Phone 08 8575 1531, email vk5lp@im.net.au

WANTED SA

• **Fukuyama multi 800D transceiver**, 144 to 148 MHz FM in any reasonable condition. Any time to VK5MX Phone 08 8346 7042 QTHR

FOR SALE WA

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• **Coax. RG213/U** 50 ohm by Suhner Switzerland. Ten lengths of 10 m. Male plug each end is BNC size with an 18 mm screw cover on outside. \$50 the lot or \$6 each. John VK6RI QTHR Phone 08 9293 2998

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• The **WIA QSL Collection** (now Federal) requires QSLs. All types welcome, especially rare DX pictorial cards, special issue. Please contact the Hon Curator, Ken Matchett VK3TL, 4 Sunrise Hill Road, Montrose Vic 3765, tel. (03) 7828 5350

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Broadcast schedules All frequencies MHz. All times are local.

VK1WI transmits each Thursday evening at 2000 hrs local time on VK1RGI 146.950 MHz and 438.375 MHz including the linked repeater system on VK2RGN Goulburn, VK2RHR High Range, VK2RMP Madden Plains and VK2RTW Wagga Wagga. VK1 Home Page <http://www.vk1.wia.ampr.org>

Annual Membership Fees. Full \$80.00 Pensioner or student \$71.00. Without Amateur Radio \$48.00

VK2WI transmits every Sunday at 1000 hrs and 1930 hrs on some or all of the following frequencies (MHz): 1.845, 3.595, 7.146, 10.125, 14.170, 18.120, 21.170, 24.950, 28.320, 29.170, 52.150, 52.525, 144.150, 147.000, 438.150, 438.525, 1273.500. Plus many country regions on 2m and 70cm repeaters. Highlights are included in VK2AWK Newcastle news Monday 1930hrs. on 3.593, 10 metres and local repeaters. The text of the bulletins is available on the Divisional website and packet radio. Continuous slow mode transmissions are provided on 3.699 and 145.650. VK2RSY beacons on 10m, 6m, 2m, 70cm and 23cm. Packet on 144.850.

Annual Membership Fees. Full \$80.00 Pensioner or student \$63.00. Without Amateur Radio \$50.00

VK3BWI broadcasts on the 1st Sunday of the month at 20.00hrs Primary frequencies, 3.615 DSB, 7.085 LSB, and FM(R)s VK3RML 146.700, VK3RMM 147.250, VK3RWG 147.225, and 70 cm FM(R)s VK3ROU 438.225, and VK3RMU 438.075. Major news under call VK3ZWI on Victorian packet BBS and WIA VIC Web site.

Annual Membership Fees. Full \$83.00 Pensioner or student \$67.00. Without Amateur Radio \$51.00

EVERY SUNDAY, at 9am LOCAL (Sat 2300 UTC). From Far North Queensland On 7.070/2 MHz. From South East Queensland: 1.825, 3.605, 7.118, 10.135, 14.342, 21.175, 52.525, 147.000, 438.500 MHz. Right throughout VK4 scan 146.6 to 148.0 MHz again at 9am local. SUNDAY 6:45pm hear LAST week's QNEWS broadcast 3.605 and 147.0 MHz from South East Queensland. MONDAY 7:00pm hear YESTERDAY's news again on 146.875 MHz broadcast from Brisbane Bayside repeater, and then 7:30pm on 3.605 and 147.0 MHz from Sth East Queensland. Text editions on packet internet and personal email, visit www.wia.org.au/vk4 News is updated 24/7 in both text and audio on this site. MP3 Audio from same website by 2300 hours each Saturday. Contact QNEWS, packet sp QNEWS/VK4WIE.BNE.QLD.AUS.OC email qnews@wia.org.au

Annual Membership Fees. Full \$95.00 Pensioner or student \$81.00. Without Amateur Radio \$69.00

VK5WI: 1843 kHz AM, 3.550 MHz LSB, 7.095 AM, 14.175 USB, 28.470 USB, 53.100 FM, 147.000 FM Adelaide, 146.800 FM Midura, 146.900 FM South East, 146.925 FM Central North, 438.475 FM Adelaide North, ATV Ch 35 579.250 Adelaide. (NT) 3.555 LSB, 7.085 LSB, 10.125 USB, 146.700 FM, 0900 hrs Sunday. The repeat of the broadcast occurs Monday Nights at 1930hrs on 3585kHz and 146.675 MHz FM. The broadcast is available in 'RealAudio' format from the website at www.sant.wia.org.au/Broadcast Page area.

Annual Membership Fees. Full \$88.00 Pensioner or student \$73.00. Without Amateur Radio \$58.00

VK6WIA: 146.700 FM(R) Perth at 0930hrs Sunday relayed on 1.865, 3.564, 7.075, 10.125, 14.116, 14.175, 21.185, 29.120 FM, 50.150 and 438.525 MHz. Country relays 3.582, 147.200 (R) Catbary, 147.350 (R) Busselton, 146.900 (R) Mt William (Bunbury), 147.000 (R) Katanning and 147.250 (R) Mt Saddleback. Broadcast repeated on 146.700 at 1900 hrs Sunday relayed on 1.865, 3.564 and 438.525 MHz : country relays on 148.900, 147.000, 147.200, 147.250 and 147.350 MHz. Also in 'Real Audio' format from the VK6 WIA website

Annual Membership Fees. Full \$71.00 Pensioner or student \$65.00. Without Amateur Radio \$39.00

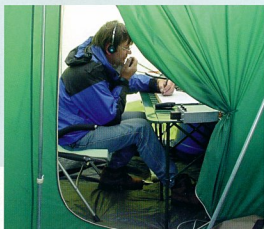
VK7WI: 146.700 MHz FM (VK7RMT) at 0930 hrs Sunday relayed on 147.000 (VK7RAA), 146.725 (VK7RNE), 146.625 (VK7RHD), 3.570, 7.090, 14.130, 52.100, 144.150 (Hobart), repeated Tues 3.590 at 1930 hrs.

Annual Membership Fees. Full \$90.00 Pensioner or student \$77.00. Without Amateur Radio \$57.00

VK8 Northern Territory is part of the VK5 Division and relays broadcasts from VK5 as shown, received on 14 or 28 MHz. The broadcast is downloaded via the Internet.



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